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ABSTRACT

This monograph describes and analyzes the implementation and impact of performance (competency)-based teacher education (P/CBTE) in both the United States and Australia. The monograph consists of a series of nine papers dealing with the significance of the implementation of P/CBTE, what the movement is and how this type of education works, an analysis of the impact of the movement, and the future of P/CBTE in Australia. The first of the nine papers discusses the increasing focus upon implementation models and strategies of P/CBTE through the 1970s, while the second paper defines CBTE and analyzes three of its vital elements. In the third paper, the state of P/CBTE in Australia is outlined, and its implementation at Adelaide College is described. Based on this experience at Adelaide College, the fourth paper suggests 10 strategies for implementing P/CBTE. The next two papers report case studies of P/CBTE models in practice, and an evaluation of three sites of P/CBTE. The seventh paper compares P/CBTE in the United States and Australia, while the final two papers of the monograph suggest future directions for the movement. Appendixes to the document include addresses presented by the author at various symposia and descriptions of P/CBTE programs in action. (KC)

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PERSPECTIVES ON COMPETENCY-BASED PROFESSIONAL DEVELOPMENT IN THE USA AND AUSTRALIA

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This monograph was completed in The Advanced Study Center of the National Center for Research in Vocational Education (Columbus, Ohio) while the author was on professional experience leave from The Adelaide College of the Arts and Education (Adelaide, South Australia) and assisted through a Postdoctoral Fulbright Fellowship.

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PREFACE

The impetus to compile this monograph sprang generally from a fascination in the discrepancy in the state of the art of performance (competency)-based teacher education between the USA and Australia, and most directly from the outcomes of the two research studies on P/CBTE undertaken in Australia. Whereas it may be contended that P/CBTE has made a considerable impact upon teacher education--particularly vocational--in the USA, and is continuing to exert a powerful influence in this as well as in other related administrative and staff development areas, the impact in Australia has been relatively unremarkable.

The only two Australian higher education institutions which have taken up the challenge to research P/CBTE have been Macquarie University in Sydney and Adelaide College of the Arts and Education in Adelaide. Both studies from these institutions recommended continuing experimentation with P/CBTE in the teacher education arena while placing a caveat on its wholesale adoption. In both reports, the importance of closely examining alternative implementation strategies was heavily underlined. These conclusions were in fact Australian echoes of the words of Gage and Winne* in America in 1975, when they advocated that "PBTE be encouraged, pursued, tried, studied and improved" but warned that "overly hasty installations of the approach...(would) only produce setbacks."

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*Gage, N.L. and Winne, P.H., "PBTE" in Ryan, K. (e d.), Teacher Education, 74th Yearbook of the NSSE, University of Chicago Press, 1975, p. 172.

It is with these echoes in mind that the present monograph has been written.

A few words are required here on the structure, purpose and methodology of this monograph. It is a composite of discrete papers, each with its own message. It was deliberately written in this manner. Some of the papers were compiled for publication, others were written as bases for conference addresses. Some are grounded in practical activities, other theorize on more general issues. Some look back via the rear-view mirror, others gaze into the misty future. Some are intended for Australian eyes and ears, others for either Australian or American consumption.

As a result, this monograph is not designed to be read as a smoothly-flowing, complete work. In fact, a few of the ideas appear in more than one paper, and no attempt has been made to eliminate such repetition in the compilation of these papers into a single monograph. Moreover, the style of referencing in those papers intended for publication differs according to journal preference. Even the label used to identify the educational movement under examination varies between papers.

Without unnecessarily forcing the issue, however, a rationale for the sequencing of these papers does emerge. The monograph directs the reader's attention first to the significance of the implementation issue (paper 1) as the one upon which depends the success or otherwise of the movement. It

then focuses upon the questions of "what?" (2) and "how?" (3 to 5). From there, the concern becomes an analysis of the impact of the movement (6 to 8), shifting to a speculative peek into its future in Australia (9).

The purpose of writing these papers has been to describe and analyse, for the benefit of readers in the USA and particularly Australia, the implementation and impact of P/CBTE in both countries. This model of professional development has often been a misunderstood phenomenon, and it is hoped that the papers incorporated in this monograph may have some small role to play in identifying its influence and potential.

With regard to method, the material and ideas for these papers have been gathered from a variety of sources. These include visits to sites, information sent to me from program leaders, participation in relevant conferences, workshops and OSU courses, interaction with NCRVE staff, resources in the NCRVE Library, and personal experience in program implementation and operation.

Many helpful people have assisted me during my Postdoctoral Fellowship in the Advanced Study Center through 1981. Dr. R.E. Norton and Dr. J.B. Hamilton have been inspiring through their personal enthusiasm and commitment to the performance/competency-based approach. My contacts with their respective staffs have also been rewarding. In different ways, Dr. W.H. Parady (AAVIM, Athens, GA), Dr. G.E. Fardig (University of Central Florida) and Dr. D.R. Cruickshank (Ohio State University) have also been sources of encouragement. My appreciation, too, goes to the other Postdoctoral Fellows in the Advanced Study Center for their ideas and companionship.

The Fellowship has progressed smoothly as a result also of considerable management and technical assistance from the National Center. I especially thank Dr. S. Gyuro, Dr. J. Watkins, Mrs. Mildred Cabrera, Ms. Cindy Cheely and Ms. Suzette Martin. Recognition is also extended to the National Academy for Vocational Education under Dr. M. Newton for allowing me to participate in many of its workshops and conferences either as a learner or as a resource person.

The Fellowship itself, of course, would not have been possible had not:

a) my home institution, the Adelaide College of the Arts and Education, granted me Professional Experience Leave for six months;

b) the Australian-American Educational Foundation awarded me a Postdoctoral Fulbright Fellowship which allowed me to extend my time in the USA to twelve months; and

c) the National Center for Research in Vocational Education, under its Executive Director, Dr. R.E. Taylor, been receptive to an international entering its researcher ranks.

For the magnificent opportunities I have had for professional and personal development during 1981, I will remain forever grateful.

CONTENTS

Preface

Contents

Paper Number:

1. The importance of the implementation phase in the life of P/CBTE — 16 pp.

   - discusses the increasing focus upon implementation models and strategies through the 1970s, the difficulty of categorizing all implementation issues, and the inventories of some writers who have tried.

2. The essence of competency-based teacher education — 24 pp.

   - suggests that CBTE's propensity to polarize opinion has been largely due to confusion over definition, outlines its characteristics as found in the literature, and analyzes in more depth three vital elements.

3. Performance-based teacher education in Australia: mystery or mastery? — 20 pp.

   - briefly outlines the overall state of the PBTE art in Australia, then concentrates on Adelaide College as an example of "rolling change" implementation.

4. Performance-based teacher education for TAFE personnel at Adelaide College of the Arts and Education: the search for quality in teaching skills development — 18 pp.

   - contends that the Achilles heel of teacher education has been skills development programs, and suggests ten specific strategies for implementing a PBTE model based on the experience of introducing PBTE at Adelaide College in a search for quality in this area.

5. The umbilical cord linking teacher education and industrial staff development: an Australian-Papua New Guinean case study. — 13 pp.

   - argues for experimentation in teacher

5. con't

education in its search for new roles and missions, and analyzes the Adelaide College-Bougainville Copper Limited contract as an example of PBTE/CBSD implementation, of staff development for industry trainers, and of an outreach endeavour.

6. Professional development of occupational educators and industrial trainers: an Australian case study — 17 pp.

   - reports on the evaluation, carried out in three Australian states during 1979, of the potential of the PBTE model and NCRVE materials for use in Australian technical teacher education.

7. A comparative analysis of competency-based teacher education in the USA and Australia — 18 pp.

   - explores the beginnings and impact of CBTE in both countries and postulates reasons for its minimal influence so far in Australia.

8. Is there life after PBTE? — 19 pp.

   - analyzes the legacies of P/CBTE in six categories and concludes that while the label may be dying, its spirit lives on.

9. Competency-based approaches in Australian post-secondary education: spring or Indian summer? — 20 pp.

   - examines the "climate" of Australian education and training toward competency-based approaches, and suggests areas where they may yet have a future.

Appendices:

A. Handout of address presented at the National Academy for Vocational Education Workshop on PBTE, Columbus, OH, 3-5 August, 1981

B. Handout of address (Paper 3) presented at the National Conference on PBTE, CBSD and CBAE, Philadelphia, PA on 13-15 October 1981.

C. Handout of address (a brief version of Paper 5) presented at the National Conference on PBTE, CBSD and CBAE, Philadelphia, PA on 13-15 October, 1981

D. Descriptions of certain P/CBTE, CBSD, CBAE and CBVE programs which were either visited by, or sent materials to, the author.

PAPER 1

THE IMPORTANCE OF THE IMPLEMENTATION PHASE IN THE LIFE OF P/CBTE

Toward the end of the 1960s in the USA, the curtain went up on the teacher education stage to reveal a new movement--performance (or competency)-based teacher education (PBTE or CBTE). As the spot - lights beamed incessantly on this movement's philosophy and concepts, they generated such intense heat that the energies of its advocates were drained in the plethora of debate on the efficacy of such an educational strategy. Several worthwhile programs were instigated in the early 70s. However, it may be contended that it was not until the second half of the decade that the focus of the PBTE cameras progressively sharpened upon implementation models and strategies. Perhaps it was because the light meters had adjusted to the extent that practitioners and researchers alike could begin to view the PBTE scene with greater perceptibility, as though the fogginess of the early days had to some degree dissipated so as to reveal the central concerns with greater clarity. Perhaps it was because, at last, a few models had evolved and the supporting cast could now begin to compare their acting endeavors with those of the more successful, thereby obtaining a measuring stick with which to gauge the progress of their own PBTE programs. Perhaps it was because the lead actors had revitalized themselves in various ways and, after the battles of establishment during the first act, were now able to

defend the cause more stoutly having received their second wind after the halftime interval.

Before some of the specific influences contributing to this sharpening focus upon implementation concerns are examined, it is worth noticing a number of indications in the literature that reflected the shift in emphasis.

While the major thrust of the early literature on PBTE centered on the philosophy, characteristics, advantages and disadvantages of the movement and on development of delivery systems, a number of reports have since appeared which purport to offer guidelines to implementation for institutions about to embark on, or already somewhere along, the competency-based road. The monograph by Finch and Harris (1976 : ii), for instance, was published

> to provide direction for those who contemplate establishing a competency-based program for vocational teachers. This document should be of value as a basic resource in the area of competency-based teacher education (CBTE) and serve as a useful tool for CBTE program implementation and improvement.

The purpose of Fardig, Norton and Hamilton's guide (1977 : 5) was

> ...to provide answers to some questions, and provide solutions to some problems. It will also suggest some alternative courses of action that may speed the process of installing the PBTE approach.

Another guide by Harrington, Miller-Beach and Norton (1978 : iii) aimed

> to provide direction and assistance for each phase of activity required in the implementation of a competency-based staff development program for post-secondary occupational instructors.

Again, the Implementing Performance-Based Vocational Teacher Education final report by Hamilton et al. (December 1978 : iii) reported that

> According to feedback from...sites, what they now needed was assistance in overcoming persistent implementation problems and planning for further, more comprehensive, implementation...The documentation should provide others interested in implementing PBTE with a rich resource.

Valuable supplements to this last report were two color slide-tape presentations, and six PBTE Implementation Resource Packets designed to address key problem areas and incorporating information and materials solicited from all 42 sites with which the National Center for Research in Vocational Education had previously worked in testing and using 100 PBTE modules.

The theme of PBTE implementation has also been adopted by some selected journals which have devoted complete, or nearly complete, issues to it. In its symposium edition of September 1973, the Journal of Teacher Education (p.179) announced that PBTE, "if appropriately and wisely implemented, [could] bring about needed reforms in teacher education", that "its implementation has ramifications which could affect the entire educational system", and that therefore

> The articles which follow are intended to clarify the PBTE concept, to provoke thought & stimulate discussion about PBTE as a viable alternative for educating teachers, and to give direction to those who intend to engage in PBTE experimentation.

In January 1974, both Phi Delta Kappan and Educational Leadership focussed on the theme of PBTE, and in the summer of 1975, the Journal of Industrial Teacher Education (p.5) also addressed the issue of PBTE implementation:

> Because the success of an idea depends on how well it is utilized, implementation of P/CBTE programs served as a focal point for this issue...The first three articles speak to general aspects of implementing P/CBTE... The remaining articles in the special feature provide pragmatic examples of how P/CBTE might be implemented.

A year later, the Journal of Teacher Education (Summer 1976) again focussed on PBTE, this time as its mini-theme, examining its implementation in terms of cost-effectiveness, humanistic perspectives, and application outside professional education to areas such as the biological and physical sciences.

In addition to whole issues of journals, of course, individual articles in almost every major educational periodical have described various PBTE programs throughout the USA. Certainly the volume of general documents on the PBTE movement in the first half of the 1970s increased enormously. Schmieder acknowledged 22 items in his first bibliography in 1971, and 800 items two years later; in 1976, Cappuzzello and his associates identified over 6,000 items (Houston 1980: 6). While no comparable figures exist on the number of publications since 1976, Houston's observation (1980: 6) is a continuing but decreased number of PBTE publications in the latter half of that decade.

It therefore appears that, by 1977, at least some of the intense heat that had been generated over PBTE in the first half of the 70s had dissipated and teacher educators were now settling more earnestly to the task of making theories, concepts and rhetoric work in practice. This shift in emphasis was stimulated most markedly in occupational teacher education by the increasing availability through 1977-8 of the 100 PBTE modules from the Center for Vocational Education, The Ohio State University, These materials, designed to cover the 384 performance elements identified by Cotrell (1972:3-8) as describing the total professional responsibilities of a vocational teacher, signalled a very significant turning point in that they provided many a PBTE program across the USA with a well-researched and carefully developed delivery system. This provision meant that those teacher educators and administrators who wished to initiate, or improve, a PBTE program were able to spend their time and energies in other fruitful ways than module development, thereby avoiding what Houston (1980:7) has termed "developer burn-out".

Analysis of module sales and use confirms the point that many educational establishments welcomed the arrival of these materials as their PBTE delivery system. In the period between March 1977 and August 1981, over 373,700 PBTE modules were distributed, with more than 1,850 different agencies and 550 individuals throughout the United States, Canada and 29 other countries purchasing the materials through more than 5,200 orders from the publisher, the American Association for Vocational Instructional Materials (Harrington 1981). Adams et al. (1981) found that these

materials were being implemented in colleges and universities for preservice and inservice vocational teacher education programs, in secondary schools for inservice programs for practicing teachers, in community colleges for staff development activities, and in such non-education agencies as Catepiller Tractor Company, IBM and Union Carbide as part of company training programs for improving instructional techniques.

The shift toward implementation concerns was also accelerated by the endeavors of the National Institute for PBTE. While the First Phase (1975-76) trained 214 persons in 10 institutions in the concepts, materials and implementation procedures of PBTE, the Second Phase (1976-77) was responsible for preparing 465 vocational teacher educators and leaders in 25 geographically diverse locations to act as resource persons, and for providing another 1636 with PBTE awareness training. In addition, several valuable audio-visual and other resources were developed to facilitate the implementation process. As the Institute's Final Report (Norton et al. 1977: 1) states:

> The Institute focus shifted from the adaptation, utilization and evaluation of PBTE concepts and materials, to emphasis on the adaptation, utilization and implementation of PBTE concepts and materials.

In a similar way, the American Association of Colleges for Teacher Education (AACTE) was instrumental in providing "guidance to member institutions regarding the utilization of a performance-based approach to education personnel development"

(Kay and Massanari, 1977: iii). Through to August 1977, the AACTE was very active in collecting and disseminating information on PBTE, giving direction to the movement, providing training opportunities, providing consultative services for many agencies and institutions, and sponsoring activities related to the potential and problems of implementation (Ibid: 2-9).

That the 1970s have witnessed considerable growth in the number of agencies implementing PBTE is evidenced by surveys of the institutions in the AACTE. These surveys, in 1973, 1975, 1977 and 1980, have shown that whereas 16% (n=125) of institutions in 1973 were operating programs that "for the most part" could be characterized as PBTE, 52% (288) by 1975, 58% (398) by 1977 and 59% (364) by 1980 were involved in PBTE programs. Asked in 1980 about their future plans, 67% of the PBTE institutions stated that they planned to continue with their present programs, 15% planned to increase their PBTE programs, and only 4% planned to decrease their PBTE programs (Sandefur and Westbrook 1978: 633-4; Sandefur 1981).

By 1980, Fardig (p.iii), in referring to the American scene, could write that:

> The principles of PBTE are now generally understood and widely accepted (though less widely applied), individualized instructional modules have been available long enough to have been thoroughly put to the test and found successful, and new PBTE programs have emerged in many areas of the country.

The deliberations of 70 vocational teacher education leaders at the National Conference on PBTE in March 1980, however, underlined the fact that the problems of PBTE implementation were still of continuing concern to teacher educators. A reflection of this realization was the staging of another National Conference on PBTE, specifically for persons experienced in the implementation of PBTE, in October 1981. And it is no accident that the venues for these two national gatherings should have been planned at the sites of two of the most exemplary PBTE programs in the USA--namely the University of Central Florida and Temple University.

In view of the impact that PETE has had upon vocational teacher education--in the USA as well as in many other countries--in terms of distribution and use of materials, and the effects of the performance-based approach on programs, teachers, classrooms and students (Adams et al.: 1981), it is hardly surprising that the issues of implementation are now the major interest of practitioners and researchers alike.

In writing on this theme, however, virtually all authors

have highlighted the impossibility of embracing all of the potential implementation constraints and options in their particular work. Finch and Hamilton (1975 : 15) even claim that there is some danger in categorizing them!

One of the chief reasons why the task of covering the area of implementation problems will inevitably remain incomplete is that PBTE programs themselves are constantly changing. One of the central principles of the systemic approach is that program shape and texture be continually refined on the basis of feedback. In 1974, Johnston (p.2) alluded to the ever-changing nature of PBTE programs in his address to the CBTE Conference in Idaho:

> ...the University of Georgia program, like all others I've seen or heard about, is currently only "on its way" in the processes of development. In my opinion, it will be many years before we actually see a program in operation which is responsive to all the various criteria that are necessarily part of this complex process.

Fardi g (1980 :23), in referring six years later to the University of Central Florida PBTE program, was even more emphatic on this point:

> ...it has been a remarkable opportunity to see an educational idea progress from its research and development stage through to its implementation and institutionalization in an ongoing program. We know there is much more to be accomplished, and indeed, <u>the task will never be completed.</u> (my emphasis)

Another reason for the difficulty experienced in collating comprehensive information on implementation problems is that, while PBTE does have particular defining characteristics (Elam, 1971), such an educational philosophy may be implemented in many different ways, depending on institutional constraints, human and physical resources, program parameters and operational guidelines. As Finch and Harris (p.130) wrote in 1976, "each vocational teacher education program is unique." One of the major hurdles that Roth (1977) discovered in collating available information on program effectiveness was that PBTE is not the same from institution to institution, and that therefore it is difficult to make conclusions about a program type when most of the programs have little real similarity. NEW PARA "This lack of uniformity among PBTE programs was echoed in the diversity of responses made by 60 institutions in a survey on the issue of what constituted a problem in the implementation of PBTE programs. Eschenbach (1979) concluded that there was significant agreement that eleven out of nineteen items identified in the literature were implementation problems, and that respondents differed in the degree of agreement on the eleven implementation problems. One of the two issues on which there was significant disagreement about whether these items were in fact implementation problems, was the need for a national network. The author's (p.30) suggested explanation was that

> institutions design and implement programs tailored to meet their own individual needs and philosophy.

> As a result, the need to disseminate and collect information about CBTE programs at other teacher education institutions is not viewed as a problem in implementing their own CBTE program.

Not only do different institutional contexts, however, lead to diversity in PBTE implementation. It seems that even educators themselves tend, somewhat ironically, not to learn from others' endeavors. Houston (1980:7), in addressing the National Conference on PBTE in May 1980, regretted that

> as a general practice, educators do not build on the work of others. New programs are based on new sets of competencies, new evaluation instruments, new structures, and new modules. Seldom (almost never) is one program, however effective, transferred to a new site. Each institution commits tremendous human and institutional resources into 're-inventing the wheel'.

Even if this statement is somewhat tongue-in-cheek, it is nevertheless the case that innovations transported to another context generally undergo metamorphosis in the transition. Fducators tend to adapt rather than simply adopt, and therefore still confront some of the problems of the initial innovator(s).

Despite the inevitable incompleteness of implementation guides, the acknowledged diversity in PBTE programs and the regrets of some writers that educators tend not to learn from others, some brave missionaries have attempted to spread the gospel on implementation problems in the hope that cross-fertilization of ideas might facilitate development and implementation of others' PBTE programs. For

example, Burke (1972) identified eleven implementation problems, Baird and Belt (1973) presented a listing of nine "key problems", Finch and Hamilton (1975) published a paper on seven "primary areas of concern", Hamilton et al. (1978) undertook research on a number of sites using an instrument of 59 statements describing factors felt to influence an institution's ability to implement PBTE, and Eschenbach (1979) established a validated list of eleven significant implementation problems out of an initial group of nineteen.

The driving force behind publishing such inventories of implementation concerns has been a powerful conviction that teacher education must be improved, and that PBTE is one of the most effective and efficient ways yet devised to lead to such improvement. Most PBTE protagonists confess that, while the philosophy has the "potential to revolutionize the entire field of educational personnel development" (Massanari 1973 : 179) it is by no means the universal panacea. It may be contended that while its central foci, emphases and outcomes

--namely, clearer definition of role-derived objectives, field-centered approaches, frequent and immediate feedback, individualized and personalized instruction, concentration on exit requirements, and mastery learning of occupationally-relevant competencies--are hard to refute, its effective implementation is not at all a simple matter and has represented the Achilles Heel at which critics take aim.

Implementation, then, is the lynch-pin. While educational philosophy may sound grand, there will always be Davids around who can make Goliath-slaying seem a simple affair unless that philosophy is put into practice with a great deal of consideration. Clothes maketh the person. A book is judged by its cover. So it is that the most readily observed aspects of PBTE are so often the first to be attacked by critics who espouse another philosophy or desire no change. As Finch and Hamilton (1975:15) have proclaimed, "...it is this area [implementation] that will probably affect the ultimate success or failure of the P/CBTE movement." After all, the philosophy incorporates several fundamental principles which, individually, educators have espoused for a long time. Perhaps the novelty of the performance-based approach to teacher education in the 1970s lies in the coalescence of so many of these ideas and the way in which they have been implemented.

It has been these sentiments which have galvanized PBTE practitioners into print with their various inventories of implementation concerns. Each writer has expressed his/her hope that in disseminating information on this subject, other educators may invest their time in learning of developments, be more aware of issues associated with the system's adoption, and therefore be more effective in their endeavors to implement the philosophy. As Howsam (p.213) warned in 1973:

It behoves those who undertake the implementation of... performance-based teacher education(PBTE) to look with care at the total system required, to identify the subsystem elements, and to ensure that the critical elements are capable of delivering. Failure to do so risks both the undertaking, and in the larger sense, the movement.

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PAPER 2

THE ESSENCE OF COMPETENCY-BASED TEACHER EDUCATION

Competency-based teacher education (CBTE) has the properties of a chemical which, through its very catalytic nature, is able to produce reactions that either generate new processes and products or inhibit further experimentation. CBTE (often also labelled performance-based: PBTE) has the propensity to polarise. On the one hand, many of its advocates have viewed the approach as the panacea for all of teacher education's ills, seeing in it foolproof solutions to the many varied problems that have beset teacher education for decades. On the other hand, many antagonists in a Thermidorian reaction have denounced the approach as overly product-oriented, narrowly mechanistic and too fragmenting of the teaching art. The battlelines on both sides of the CBTE fence--frequently labelled as the camps of humanism and behaviorism--have tended to become so fixed in their positions, rigidly poised on the defensive at the extreme ends of the educational continuum, that their stance allows them to win battles only over straw men. Neither camp, however, succeeds in winning the war.

The stalemate that so often results from such debate derives in large measure from confusion over definition. Discussion on the efficacy of such an educational strategy

frequently generates more heat than light. CBTE has meant different things to different people. In addition, the ever-changing nature of CBTE programs has contributed to the difficulty of understanding the approach. One of the central tenets of the systemic approach is that program shape and texture be continually refined on the basis of feedback. Writers have alluded to this characteristic in the development of their own institutional programs (Johnston, 1974; Fardig, 1980). Others have drawn attention to the effects on implementation of CBTE programs of such factors as institutional constraints, human and physical resources, program parameters and operational guidelines (Finch and Harris, 1976; Fardig, Norton and Hamilton, 1977; Hobart and Harris, 1980). As a consequence of this diversity, it is not surprising that experienced researchers of the movement should experience difficulty in collating data on CBTE program effectiveness (Roth, 1977), on agreement over implementation concerns (Eschenbach, 1979) or on extensiveness of CBTE involvement (Sandefur and Westbrook, 1978; Sandefur, 1981), or that interested educators should be frustrated in their attempts to understand the approach in both theoretical and practical terms.

The purpose of this paper is to outline the characteristics of CBTE as they are defined in the literature, and then to

analyse what the authors consider to be the three most important elements. Many imposing lists of program characteristics and, more recently, of implementation problems and issues may be located in the literature on the CBTE movement. A great number have been program-specific, outlining features and problems pertaining to a particular site, discipline or staff member. A need exists for a more general examination of their implications for teacher education faculty, students and institutions. This paper therefore aims to provide background for those Australian educators contemplating the approach as one viable alternative for educating teachers, or to provoke thought and encourage discussion among those merely wishing to comprehend the ideas and practices associated with the movement.

While there have been many interpretations of CBTE in the literature (Lindsey, 1973; Weber, 1973; Houston, 1974; Hall and Jones, 1976), the definition with the most common currency is that developed by Elam (1971) for the American Association of Colleges of Teacher Education PBTE Committee and later refined by that Committee (AACTE, 1974). This three-phase definition lists essential elements, implied characteristics, and related and desirable characteristics. The five elements which are considered to be essential if a program is to be

labelled as CBTE are as follows:

(1) competencies to be demonstrated are role-derived, specifically stated and made public;

(2) criteria for assessment of competencies are explicit in stating their levels of mastery, and made public;

(3) the instructional program provides for the development and evaluation of the student's achievement of each of the competencies;

(4) assessment uses performance as the primary source of evidence as well as taking into account knowledge relevant to each competency; and

(5) rate of progress is determined by demonstrated competency.

These essential elements imply that instruction is individualized and personalized, learning experiences are guided by feedback, the program as a whole is systemic, exit rather than entrance requirements are emphasized, and that the student is held accountable for performance. In addition, there are other characteristics held to be desirable in a CBTE program: field-centered instruction, broad-based decision making, modularized instruction, research-oriented program, emphasis on career-long professional preparation, and student participation in program design.

From this pool of characteristics there may be distilled, in the opinion of the authors, three crucial elements:

1. specification of performance outcomes
2. individualisation of learning
3. demonstration of mastery learning.

These elements have been investigated in both of the research studies on CBTE in Australia (Levis and Thompson, 1979; Hobart and Harris, 1980). When evaluating the effectiveness of CBTE as a teaching/learning system and anticipating the problems that may be encountered in its implementation, these elements necessitate careful consideration.

1. Specification of performance outcomes

   Every teaching situation has some sort of objective, goal or end point. Whereas in many programs these objectives may not be stated very clearly, basic to a CBTE program is the definition and public disclosure of the outcomes required by that program. These are called "competencies", defined as the knowledge, skills and attitudes necessary to perform a critical teaching task (for example, develop a course of study, conduct group discussions or demonstrate a concept). These competencies are derived from research and occupational

analyses of the job of a classroom teacher (Cotrell, 1972; Rossman and Bunning, 1978; Blank, 1979). From this research a set of competencies is drawn up, and the teacher education program strives to assist student teachers develop these competencies to a 'mastery' level.

This element of CBTE gives rise to the following considerations:

- It is clear that the specification of competencies to be mastered, renders PBTE programs more susceptible to careful analysis, dissection and critical evaluation. This very fact means that competency-based programs may come in for more criticism than their traditional counterparts. But this critical evaluation is a very healthy development and should result in a more carefully researched basis on which to build teacher education.
- Having established through research and occupational analyses the total set of competencies that teachers may need, the CBTE system allows for the prescription of certain basic core competencies required by all teachers. The

student teacher is then able to select other competencies that are needed by the particular teaching situation, interests and capabilities of each individual. There is a balance, therefore, between prescribed core competencies and elective competencies. The competency-based system, therefore, is an open system with goals being partially developed in consultation with the student.

- Probably the most contentious single issue with competency-based education is the degree of prescription which learners believe it is legitimate to impose. This has both philosophical and practical aspects. At the philosophical level, there is debate amongst educators in general (and adult educators in particular) as to whether it is legitimate to impose prescribed learning outcomes in advance. One school of thought argues that people will only be encouraged to learn something to the extent that they personally view it as relevant, and have had a hand in shaping the statement of desired goals. The countervailing

argument is that people who are not expert in any particular field are in no position to make an informed input to the planning process at the outset. From a practical point of view, the election by the student of his/her own particular set of competencies to be developed makes the system far more complex and demanding in that, as students move into the elective arena, the program must allow for a variety of activities being undertaken by different students at different times. This of course creates difficulties in organising group learning activities, and increases the need for a variety of resources.

- To the degree that specified competencies are seen to be peripheral or trivial then the student may well reject the CBTE program. The research base that indicates a clear relationship between teacher performance and student learning is still weak, tentative and hypothetical (Dunkin and Biddle, 1974; Medley, 1977; Silvernail, 1979). The more detailed prescription of performances that characterize a CBTE program may be rejected, therefore, by students because of the lack of research validity

for such competencies. This is not unique to a CBTE program but has been verbalized by students in teacher education programs for some time. It should not, therefore, be the basis for rejecting a CBTE program but it gives further weight to the argument that the more specific a program is about its outcomes, the easier it is to evaluate and criticise.

- Even amongst those who agree philosophically with the competency-based approach, there is disagreement about the extent to which particular skills can be 'operationalized' or specified. This is particularly true in the field of teaching where a body of opinion still maintains that teaching is not enough of a science to lend itself to specification of behavioral outcomes.

2. Individualisation of learning.

A learning system that is going to meet the characteristics of a CBTE program with its emphasis on mastery and the specification of learning outcomes is, of necessity, going to be individualised and self-paced. For the system to be such, it must

accommodate at least the following differences among learners:

- the individual's pace of learning
- the time available for learning
- the individual's prior achievements
- the individual's particular learning style
- the individual's preferred type of feedback and reinforcement
- deficiencies in skills and knowledge for the program
- the individual's level of motivation and commitment to learning
- the availability of supporting resources and supervised practice
- the combination and sequence of skills that meet the individual's particular needs.

To allow for the flexibility required to meet these individual differences, CBTE programs have tended to be modularized. There is a tendency to identify such modules with programmed learning materials and for students and teacher educators to transfer their attitudes to programmed learning across to CBTE modules. This is unfortunate for programmed learning is a highly prescribed form of learning, whereas the

prescription in competency-based education is not in the MODE of learning but in the definition of outcomes. CBTE modules allow for, and encourage, a variety of learning experiences and alternative approaches to the development of stated competencies. The CBTE system encourages the student and resource person to be creative in designing the learning program. However, to the degree that such creativity is not applied the module can become prescriptive and limiting in its effectiveness. Thus, a CBTE program must provide for a wide variety of learning experiences including lectures, tutorials, projects, simulation, role play, programmed learning and so on (see, for example, the 100 PBTE modules developed at the National Center for Research in Vocational Education, and outlined in Hamilton and Quinn, 1978). Unless this variety of learning experiences is included within the program, it will not meet the individual learning styles and preferences of students.

A danger in the modularization of learning materials is that it can lead to a disjointedness within the learning system. The program can thereby appear to consist of a smorgasbord of competencies that lack

the logical and holistic features of a professional development program (Broudy, 1972; Nash, 1973). This should not characterize a CBTE system in that the competencies specified within that program have been developed from a careful analysis of the professional responsibilities of a teacher. However, the degree of specificity in defining those competencies may tend to over-emphasize the parts and neglect the whole.

On the other hand, CBTE has the potential for integrating a teacher education program in a way that avoids some of the criticisms that have been made of teacher education the world over. Development of classroom competencies can be coordinated and integrated with all other learning within a professional development course, as the term 'competency' refers to the whole range of knowledge, skills and attitudes required to perform a given task. For example, an educational psychology course needs to be integrated with the development of classroom competencies in such a way that the student's perceptions attained through the psychology course increase his/her capabilities within, and commitment to, the competencies being developed. An example of this might be that the understanding by the student of motivation, or advance organisers,

from an educational psychology course needs to relate directly to the student's development of the competency to introduce effectively a lesson. Again, the student's understanding from sociology of the nature of his/her students, or the social setting of further education in the classroom, needs to be integrated with the development of competencies relating to determining needs and interests of students and creating classroom climate. Traditional teacher education courses have tended not to integrate many of the units in an effective way, and therefore have failed to allow related learning to support the professional performance of the teacher. As a consequence, a certain amount of what is learnt in specific disciplines loses its value because it is not applied in the teaching performance arena. For instance, teachers frequently answer correctly paper and pencil tests relating to the nature of motivation and varying models of motivation, and then in their professional performance fail to undertake those activities that may motivate their students.

This element raises the following issues for the teacher educator, the learner and the institution:

For the teacher educator -

- Within the CBTE system there is still need for lectures, tutorials and seminars, However, more emphasis is placed on the skills of motivating, facilitating, counselling and encouraging students to draw on a wide range of resources in achieving predetermined competencies, as well as on constant feedback and evaluation.
- The teacher educator needs to develop a close personal relationship with each student in order to help him/her become aware of developmental needs and performance weaknesses. This demands a different set of skills for the teacher educator compared with more traditional approaches.
- It is likely that capable students will make less use of the teacher educator as a resource person than in a traditional program. This fact tends to place the resource person in what he/she might view as a subservient, reactive, or even unprofessional role in relation to students. For many experienced teacher educators, such a change in role is seen as threatening and undesirable.

- As a consequence of the individual needs of students, the resource person must have the ability to manage both time and resources. He/she needs to be available to individual students as much as possible, and to allocate time for individual consultations. Likewise, since such programs are based on the varying developmental needs of the students, the resource person must be able to match individual needs with particular resources, as well as to keep records of individual progress.

For the learner -

- The learner has to be able to cope with several demands implicit in this system. They arise from the fact that students are expected to take responsibility for their own learning. This creates the need to be an initiator, a self-starter, and a self-disciplined person in terms of management of time and resources. Many will need to find ways of developing the skills of self-direction, perhaps for the first time.
- In the self-learning system students must have the ability to obtain and handle information, and to perceive its relevance to the development of

specified competencies. These learning abilities, however, may not have been well developed in prior educational experiences.

- Many learners may react negatively to aspects of CBTE which do not match their expectations of the teaching-learning function. These aspects include the teacher educator as counsellor and facilitator, rather than as lecturer; evaluation by performance rather than written or other forms of cognitive recall; and the diagnostic form of feedback which can be threatening to the insecure or those lacking in self-confidence.

For the institution -

- An aspect of the individualisation of the learning system is that the CBTE program caters for varying input abilities and prior experiences and attainments by students. The emphasis in the program is on exit ability at mastery level and not on entrance qualifications. A student who enters the program with a high level of predeveloped abilities, therefore, will be able to demonstrate mastery attainment with much less process effort and time than a student who comes in with minimal prior

attainments. Thus, the teacher education program must allow students to take varying lengths of time and draw on varying pools of resources to attain mastery of a competency. In an in-service teacher education program where time is limited, this means that some students will attain a set of competencies over one term, while others will require more than a term to attain that set of competencies at mastery level. Such differences are not generally catered for in the administrative procedures of tertiary education institutions.

3. Demonstration of mastery learning.

A vitally important feature of CBTE is that of "mastery learning". Mastery learning is learning that is developed to a standard required for the efficient performance of specified competencies. In occupational education, the competencies to be developed are determined by the requirements of the occupation and the standard of performance of those competencies is determined by the criteria for effective performance within that occupation. A person, then, has not

achieved mastery until he/she demonstrates a particular competency at the performance standard required by the occupation.

Evaluation of the competency is criterion-referenced rather than norm-referenced. Performance is assessed relative to a set of objective criteria determined by the performance requirements of the occupation. In contrast, traditional normative testing has evaluated students in relation to the performance of other students within the group or to some pre-determined norm set by the evaluator.

Students, then, have to continue to apply themselves to the development of competencies until they have reached mastery level. Those who demonstrate a competency at less than mastery have not failed, but rather have received diagnostic feedback to guide further development until the desired, prescribed standard can be demonstrated. A very important characteristic, therefore, of mastery learning is that of continual feedback of a diagnostic nature as formative evaluation.

Varying degrees of effort need to be given by students in attaining mastery in any particular competency.

Students differ in ability, in life experience and in motivation. The implications of these individual differences for mastery learning are that students must accept the fact that the time and affort required to develop a competency to mastery level will vary from student to student. Furthermore, students may have to demonstrate their performance with respect to any competency a number of times before they have achieved mastery of that competency. Students need to accept this re-presenting as developmental learning rather than failure. These implications have not constituted the expectations of students within traditional learning modes. Indeed, traditional learning systems have not provided for them.

Mastery learning presents some difficulties for a teacher education program. There is the evident difficulty of establishing the validity and reliability of the instruments used to measure the competency. There is the problem of developing models of mastery of various competencies for student learning. There is the problem of providing an educational structure to permit a greater length of time and effort on the

part of some students than of others to attain mastery. There is the problem, for both teacher educators and institutional administrators, of reconciling criterion--referenced assessment, in which all successful students have by definition attained mastery standards, with traditional letter-grading systems. There is the problem of student motivation to strive for excellence rather than a sufficient standard to satisfy the requirement for a 'pass' in the program.

Finally, there is the critical problem of defining the standard of learning that constitutes mastery. Three levels of learning may be considered:

- the acquiring of a competency to a specified level of performance,
- the maintaining of that competency by developing it to a 'natural' or 'comfortable' level of performance, and
- the incorporating of the competency into the integrated habit skills of professional performance.

While the last of these is the ideal to which mastery learning aspires, the variables that affect professional performance are more than those related to the formal learning process within a teacher education program.

Moreover, the means of assessing such a level of performance are complex.

A difficulty which results from the process of mastery learning for the resource person is the conflict between his/her responsibility of monitoring students' teaching through diagnostic feedback to assist the development of mastery within that teaching, and the further responsibility of evaluating students' performance to determine whether they have achieved mastery of the competencies and should, therefore, graduate from the program. The conflict can be real for both students and teacher educators. It derives from the dual role of supporting students' learning through monitoring their progress and evaluating students' performance in terms of qualifying for occupational appointment.

However, while other elements of a CBTE program are important, that program will generate the excellence required by the profession only if the teacher educator insists upon the attainment of that excellence through the process of mastery learning. Without such insistance, a CBTE program will suffer the same criticisms that proponents of the approach have levelled at traditional skills development programs.

With such factors as an over-supply of teachers, public demand for more returns from schooling and political calls for educational accountability, the emphasis in teacher education has at last been able to shift toward quality. That shift has been most visibly enshrined in the spate of recent inquiries, both national and state, into Australian teacher education (TEC, 1978 and 1979; Auchmuty, 1980). It may well be that a carefully planned and operated CBTE program can act as one alternative vehicle in this drive for excellence, as it indeed has at numerous North American universities including Toledo, Houston, San Diego, Central Florida and Temple. Certainly some of the difficulties outlined in this paper can be avoided through effective implementation of a traditional teacher education program. However, some of them will be overcome only when the learning systems that students experience from early years of education cultivate within those students skills that encourage and support their own initiatives in self-learning and self-development, and when structures of educational institutions are changed sufficiently to accommodate the three crucial elements analysed in this paper--specification of outcomes, individualisation of learning and demonstration of mastery learning.

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PAPER 3

PERFORMANCE-BASED TEACHER EDUCATION IN AUSTRALIA: MYSTERY OR MASTERY?

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1. State-of-the-art in Australia

In contrast with its state of the art in the USA (Kay and Massanari 1977, Houston 1980, Adams et al. 1981), performance-based teacher education (PBTE) in Australia is virtually unknown, untried and unresearched. It is, in short, a mystery.

Analyses of innovation in Australian teacher education either have made no reference to this model (Goldman 1976) or have mentioned the only research study on it prior to 1979 (Turney 1977, Hewitson 1979). Thus, evidence on the development and operation of PBTE programs is virtually non-existent, the number of publications relating to PBTE is very slight, and the research on PBTE amounts to a grand total of two studies.

Considering Turney's air of expectancy in 1977:

> It will be interesting to observe how Australian teacher educators will develop innovative modifications in response to the examples set by competency-based teacher education programs which have become popular in North America in recent years. This would appear to present an exciting challenge to educators.. (pp. 152-3),

and given the extent of professional and public debate (Hewitson, 1979, Fordham and Ainley 1980) and political scrutiny (TAFEC 1978 and 1979, Auchmuty 1980) over teacher education and staff development, one would perhaps have anticipated more Australian educators to have taken up the gauntlet of performance-based approaches.

There have been some indications however, of an awakening interest in PBTE. An address in 1975 by Dean R.B. Howsam of the University of Houston to the South Pacific Association for

Teacher Education in Sydney stimulated considerable discussion on the model. Two different national agencies have funded PBTE studies at Macquarie University in Sydney (Levis et al. 1979) and Adelaide College of the Arts and Education (Hobart and Harris 1980). Both institutions evaluated the PBTE model, the former in preservice secondary teacher education and the latter in inservice post-secondary teacher education, and both concluded that, given its potential there was a strong case for continuing development and research in the area. Another sign of interest may be gleaned from the high sales figures for Australia of the PBTE modules developed by the National Center for Research in Vocational Education (NCRVE) in Columbus, Ohio, published by the American Association for Vocational Instructional Materials (AAVIM) in Athens, Georgia, and now distributed in Australia by Adelaide College. Sales to Australia through May 1980 ($41,000) far outstrip sales to any other country except the USA: Canada ($20,000), England ($6,000), New Zealand ($850) and Singapore ($700). While these sales are encouraging, to this point most of the materials are being used in PBTE programs at Adelaide College.

It is to these particular programs that the discussion now shifts. This college is used here as a case study of an Australian institution's attempt to attain mastery over the mystery of PBTE. Analyzed are the factors leading to its introduction, the implementation problems experienced in the first three years

and strategy solutions employed to address these problems, the factors contributing positively to its operation, and finally, the success that it has thus far enjoyed.

2. Factors leading to the introduction of PBTE

With any educational innovation, a multitude of complex factors interact to facilitate or inhibit its introduction and acceptance (Kester and Hull 1973). In this case study, three factors may be highlighted. They relate to the external climate, the internal situation, and the change agent.

The mid to late 1970s were a time of appraisal of teacher education for Australian technical and further education (TAFE) teachers. In this period were published several inquiries on the subject. It was also the time when course assessment committees visited advanced education institutions for the purpose of nationally accrediting most of the present TAFE teacher education courses.

Given this national climate of inquiry, the existing methodological components in the TAFE teacher education courses at Adelaide College were increasingly being recognized by faculty as inadequate. First, while innovatory approaches were being tried piecemeal, there was little programmatic effort to develop systematically the instructional skills of student teachers. Secondly, the field supervision of student teachers' instruction was not effective for reasons of insufficient faculty, difficulties in moderating supervisory standards of other staff when

they were used, and lack of explicit criteria for determining exit requirements of student teachers. Thirdly, the progressive decline in the proportion of TAFE teachers and increase in adult educators from many "diverse settings" (AACTE 1980) meant that programs struggled to keep pace with the needs of this far more heterogeneous group. Fourthly, the rising proportion of external students also meant that techniques traditionally employed for on-campus students needed substantial modification.

It is against this background of the external climate of inquiry and internal situation of inadequacy that the third factor--the change agent--may be considered. The new Head of Department, who arrived in January 1979, had recently spent two years in the USA during which he had been exposed to PBTE concepts and materials and had travelled the USA assisting in training workshops for resource persons in PBTE programs. He had been successful upon his return in gaining a Tertiary Education Commission grant to evaluate the PBTE model and materials for TAFE teacher education in Australia.

So it was that PBTE was born within TAFE teacher education courses at Adelaide College. After a resource person training workshop early in February, the 1979 academic year began later that month with a PBTE program comprising competencies selected by faculty, modular materials developed and published in the USA, and resource persons virtually familiarizing themselves with the philosophy, practice and materials at the same time as the students.

The PBTE program pattern followed that of "course substitution" (Fardig et al. 1977:20). All the methodological components of three awards, which were offered on both an on-campus and an external basis, were substituted with learning experiences contained within a number of the performance-based modules from the NCRVE. A substantial proportion of another special contract program, to provide staff development for industry trainers within Bougainville Copper Limited Company in Papua New Guinea, was also offered in the performance-based mode (Harris 1981).

3. Implementation concerns and strategy solutions

In retrospect, it was a pity that the concept could not have undergone a full gestation period. The PBTE literature abounds with warnings that "overly hasty installations of the approach...will only produce setbacks" (Gage and Winne 1975: 172). It also abounds with recommendations on implementation strategies (Burke 1972, Baird and Belt, 1973, Finch and Hamilton 1975, Fardig et al. 1977, Eschenbach 1979). The rapidity with which the program was introduced in Adelaide has meant that the three year period following its birth has witnessed several teething problems which may have been avoided had time been available to prevent them prior to implementation rather than curing them post factum.

However, each of these problems has been addressed in certain ways. This curing process has been facilitated by a

major evaluation carried out as part of a national research project, funded by the Tertiary Education Commission, during 1979 and by a less extensive evaluation at the end of 1980. The evaluation of the first year (1979) of the PBTE programs found, inter alia, that any ineffectiveness in them related to the method of implementation rather than any intrinsic failing of the PBTE philosophy per se. The report concluded that careful attention must be given to strategies that affect the successful introduction and operation of PBTE programs within particular institutional contexts (Hobart and Harris 1980:162).

The figure below identifies 14 main problems experienced after introduction of the PBTE programs, and summarizes the strategy solutions utilized during 1980-81 to address these problems.

Implementation concern	Strategy solution
A. Program design:	
1. No local verification of competencies identified by Cotrell et al. (1972) and used as the basis for module development by NCRVE (Hamilton and Quinn, 1978).	1. A study (late 1980-early 1981) to verify competencies required by different levels of TAFE staff in metropolitan and country areas of South Australia.

Implementation concern	Strategy solution
2. Too little structure in the program in the first year.	2. From the second year, more resource person "input" sessions, small group discussions and peer group teaching were scheduled.
3. Limited proportion of elective modules in the first year.	3. Somewhat more flexibility in the program from the second year.
B. Training/inducting participants:	
4. Faculty's need for more planning time, and more discussion on program issues.	4. Departmental "retreats" for 1-3 days at venues other than the college. New faculty work with PBTE-experienced faculty in program teams. Availability of evaluation reports for faculty.
5. Lack of TAFE senior staff, informed about PBTE, to serve as supervisors (onsite resource persons).	5. Two-day training workshops with half-day follow-ups. Conducting of a 5-day supervision of teaching course (May 1980) for credit in another award.

Implementation concern	Strategy solution
6. Hasty induction of students to PBTE in first year.	6. A more extensive introduction to the PBTE philosophy and materials. Audiotape developed for external students on this topic.
C. Human resources:	
7. Lack of supervisory network in TAFE colleges to support and monitor the teaching of beginning TAFE teachers--especially in regional centers.	7. Establishment, in collaboration with the State Department of Further Education, of a supervisory system in TAFE colleges (during 1980). Supervisors to advise and assist but not assess. Not paid; part of the duty statement of a senior staff member.
8. Overload on some faculty resource persons during the first year.	8. Decision that all faculty would serve as resource persons. Faculty members grouped in program teams to service a particular award.

Implementation concern	Strategy solution
D. Material resources:	
9. Lack of local examples and models of mastery in competency attainment.	9. Accumulation of such resources by: (a) searching the literature for relevant materials already existing in other States, and purchasing them after review. (b) hiring specialist TAFE teachers to develop them. (c) retaining the best products of students.
10. No easily accessible TAFE resource center.	10. Removal of faculty from their building for 4 months (September-December, 1980), and construction of a TAFE Resource Center. Facility in the middle, surrounded by faculty offices.

Implementation concern	Strategy solution
11. No easily accessible microteaching facilities and equipment for peer group teaching and analysis.	11. Establishment (January 1981) in the TAFE Resource Center of two microteaching and two playback rooms, with new equipment set up and ready to use.
12. Long delays of PBTE materials from the USA.	12. Adelaide College established as Australian distributor for PBTE materials published by AAVIM.
E. Familiarizing significant Others:	
13. Unfamiliarity of TAFE college personnel with PBTE philosophy and materials, and with Adelaide College methodology programs.	13. Familiarization "open-days" (Sept.-Nov. 1980) in the major TAFE colleges in Adelaide and regional centers--faculty discussed programs, display boards and materials on show, written handouts available.

Implementation concern	Strategy solution
14. Unfamiliarity of other academic faculty within Adelaide College with PBTE philosophy and materials, and methodology programs for TAFE teachers.	14. More dissemination of information throughout the College; invitations to individuals and whole departments to discuss programs. Availability of the evaluation report on the 1979 PBTE programs in 3 Australian States.

As a consequence of the initiatives taken to overcome these implementation problems, the PBTE programs have progressively become more finely tuned. Each succeeding term, and year, has seen the elimination of a few more gremlins from the system. There are still aspects, however, that require constant attention and consolidation. These include:

(1) identifying, training and retaining onsite resource persons. The triads--teacher, onsite resource person and teacher educator--must coordinate effectively in the development of the teacher's instructional competencies.

(2) accumulating local resources. Collecting relevant local resources to supplement the American modules is a gradual (and slow) process.

(3) grading. Because some teachers seek recognition for special efforts, different approaches to grading may need to be tried. Many American universities with PBTE programs, such as the University of Central Florida and University of Minnesota use grading systems which take into account affective or cognitive dimensions in addition to performance.

(4) convincing significant others. The need exists for more research to indicate whether PBTE programs are at least as effective as traditional programs. Misinterpretations and misunderstandings of PBTE need to be corrected through more exposure of the model and publicizing of its characteristics.

(5) conducting external studies. While the PBTE materials provide an excellent focus for study, the strategies and methods of implementation of PBTE in outreach programs demand continual evaluation and experimentation.

(6) locating the optimum degree of program structure. The search continues for a satisfactory solution to the dilemma of program structure (scheduled large and small group seminars, and microteaching sessions) versus individual self-pacing and sequencing.

The constant changing of program shape and texture remains an exciting challenge to PBTE implementors. Such change is one

of the characteristics of PBTE philosophy, since the systemic approach demands that programs be continually refined on the basis of feedback. Johnston (1974:2) has alluded to this fluidity at a conference address in Idaho:

> ...the University of Georgia program, like all others I've seen or heard about" is currently only "on its way" in the processes of development. In my opinion, it will be many years before we actually see a [PBTE] program in operation which is responsive to all the various criteria that are necessarily part of this complex process.

Fardig (1980:23), referring to the University of Central Florida PBTE program, was even more emphatic on this point three years after its implementation:

> We know there is much more to be accomplished, and indeed, the task will never be completed.

4. Favorable factors in the programs' operation

Given the brief gestation period, it is remarkable that the PBTE programs have enjoyed the degree of success that they have. This success has been due to a number of factors operating in the programs' favor:

(1) the thorough research and development that went into the production of the PBTE materials. These high quality materials have been purchased by over 1,350 agencies and 250 individuals in all 50 U.S. states, 5 U.S. territories, 11 Canadian provinces, and 24 foreign countries (Adams et al., 1981), an indication of the very wide distribution of these materials since March 1977.

(2) the PBTE experience, conviction and enthusiasm of the program leader. This factor has been instrumental in the success of other programs such as Temple University in Philadelphia, The University of Central Florida in Orlando and the University of Houston in Houston, Texas.

(3) willingness of the majority of the faculty to parent the model in its infancy at such short notice.

(4) receptiveness of the administration of the State Department of Further Education to the approach, and its concurrence in the formation of a TAFE college-based advisory network of local resource persons.

(5) federal funding from the TAFE Council which allowed the development or purchase of local materials, establishment of a resource center with videotaping facilities, and research on the verification of teaching competencies required by various levels of TAFE staff in South Australia.

(6) contract funding from the Bougainville Copper Limited Company for that particular PBTE program.

(7) willingness of AAVIM in Athens, Georgia to permit Adelaide College to serve as Australian distributor of PBTE materials.

5. Judgment on the PBTE programs

Evaluation of the programs indicates that the model has been perceived as effective, that the materials have been considered suitable as a means of delivery, and the participants have described their experiences with PBTE as valuable. (Specific details on these aspects have been presented elsewhere: Hobart and Harris 1980). At a more general level, experience with the PBTE programs has led to the following judgments:

(1) The PBTE model, based upon the identified competencies needed by vocational education teachers (Cotrell et al. 1972), has furnished a systematic approach to the development of instructional skills, and a program with greater content validity (Tuxworth 1977) than the traditional model.

(2) The performance-based modules, with their explicit criteria and requirement for mastery performance, have provided a sound basis for the evaluation of competency attainment. Faculty are now able to fulfil more effectively their supervisory role in the field.

(3) The capability of the PBTE programs to individualize and personalize learning has enabled faculty to meet more satisfactorily the great diversity of needs among adult educators enrolled in the awards.

(4) The self-paced and almost self-contained nature of the PBTE materials have allowed faculty to accommodate more adequately the needs of external students scattered throughout Australia and Papua New Guinea.

There are many other advantages of PBTE, as well as limitations, listed in the literature on teacher education programs (Kay and Massanari 1977, Norton et al. 1978, Adams et al. 1981). However, the above features have allowed the Adelaide College programs, in particular, to go a long way towards meeting the four major inadequacies that they were experiencing in their traditional form.

6. Conclusion

This paper has outlined the overall state of the PBTE art in Australia, and has then focussed upon the predominant example of PBTE as a case study. Analyzed have been its antecedents, its teething problems and their solutions, the factors operating in its favor, and its success thus far. With the gestation period being so brief, it has been an example of "rolling change" implementation (Fardig et al. 1977:12), of revision and refinement as experience is gained and formative data gathered. Though this mode of implementation is not the type recommended in the annals of educational innovation, it is often the model adopted by or forced upon higher education institutions.

The case study of Adelaide College is one attempt in Australia to unravel the mystery of PBTE and to attain mastery over its implementation. Perhaps others in that country may learn from this case study. Only time will tell, however, whether the current climate of PBTE in Australia represents an Indian summer or the true signs of spring.

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PAPER 4

PERFORMANCE-BASED TEACHER EDUCATION FOR TAFE PERSONNEL AT ADELAIDE COLLEGE OF THE ARTS AND EDUCATION: THE SEARCH FOR QUALITY IN TEACHING SKILLS DEVELOPMENT

The Achilles Heel of teacher education programs worldwide has tended to be the component concerned with the development of instructional skills. Of the various types of studies within teacher education programs--enrichment, content and method studies--it is generally the theory and practice of teaching element which is the least well accomplished.

The basic reason for this vulnerability is the infancy of research in the area of teacher effectiveness. Teacher educators have been guided by precious little research on what constitutes effective teaching in terms of promoting student learning (Medley 1977, Silvernail 1979, Ornstein and Levine 1981). From this lack of a research base springs political, public and professional uncertainty as to what should be included in teacher education programs and how to develop most effectively the instructional skills (competencies) of teachers. This uncertainty has led over time to the situation where teacher education has been regarded as a poor cousin in terms of professional status when compared with the training of other professionals, and in particular, teaching skills development has been downgraded even by many within teacher education ranks. Sometimes teacher educators have found it more comfortable to be ostriches in the sands of generalized theory than to risk sticking their necks out to experiment in the quicksands of instructional practice.

The infant status of research in this area, however, has presented a challenge to many researchers and educators. The literature on teacher education includes many summaries of innovation (Lomax 1976, Turney 1977, Taylor 1978, Hewitson 1979), reports of governmental inquiries (DES 1972, TAFEC 1978, Auchmuty 1980) and descriptions of program experimentation (Crabtree 1980, Friedman et al. 1980, Thompson and Levis 1980).

In addition, frequent national conferences and workshops, emerging journals and active consulting mirror a renewed interest in this field in the current climate of economic stringency and teacher oversupply. Drives for relevance, movements of accountability, recognition of individual differences, and desires to accommodate special needs populations have all played an important role in stimulating the search for quality in teacher education.

The purpose of this paper is to stimulate further communication among teacher educators by outlining one example of this search for quality. The following presents an analysis of the implementation during 1979-1981 of performance-based teacher education (PBTE) programs at Adelaide College of the Arts and Education in South Australia. These PBTE programs were introduced into teacher education awards for technical and further education (TAFE) teachers.

The background

With any educational innovation, a multitude of complex factors interact to facilitate or inhibit its introduction and acceptance (Havelock 1971, Rogers and Shoemaker 1971, Kester and Hull 1973). For the purposes of this case study, these factors may be summarized in two broad categories: the external climate and the internal situation.

The mid to late 1970s were a time of appraisal of teacher education for Australian TAFE teachers. In this period were instigated a number of activities on the subject, including a governmental report (COTTE 1975), an analysis in a published book (Hermann et al. 1976: 107-119), an historical paper (Fragar 1978), a TAFE Council investigation which incorporated a systematic analysis of curricula in each State by a British consultant (TAFEC 1978), that Council's final recommendations (TAFEC 1979), and preparations for the first national conference of TAFE teacher educators to be held in 1980. It was also in these few years that curriculum assessment committees visited advanced education institutions for the purpose of nationally accrediting the present TAFE teacher education awards.

From the TAFEC reports came a number of recommendations, two in particular being of relevance to this case study:

- That programs should be "designed primarily to impart the skills and knowledge required to enable [TAFE teachers] to become effective practitioners" (TAFEC, 1978 and 1979, recommendation 1).

- That programs should be "based on an objective assessment of the functions of all categories of TAFE teachers and the knowledge and skills necessary for the efficient and effective performance of these functions (TAFEC, 1978 and 1979, recommendation 8).

In the light of this national climate of inquiry, the existing methodological components in the TAFE teacher education awards at Adelaide College were increasingly being recognized by faculty as inadequate. First, while innovatory projects were being tried piecemeal, there was little programmatic effort to develop systematically the instructional skills of TAFE teachers. Secondly, the field supervision of the teachers' instruction was not effective for reasons of insufficient faculty, difficulties in moderating supervisory standards of other staff when they were used, and lack of explicit criteria for determining exit requirements. Thirdly, the progressive decline in the proportion of enrolled TAFE teachers and increase in adult educators from many different employment contexts meant that programs struggled to keep pace with the needs of this far more heterogeneous group. Fourthly, the rising proportion of external students also meant that techniques traditionally employed for on-campus students needed substantial modification.

Introduction of the PBTE programs

It was against this background of the external climate of inquiry and internal situation of inadequacy that PBTE programs were born within TAFE teacher education awards at Adelaide College. The central features of these programs were individualized learning experiences focussing upon mastery attainment of role-derived competencies in actual teaching situations. Emphasized in these programs were performance as the primary source of evidence for assessment, immediate feedback, demonstrated competence as the determinant of progress through the course, the field-centered nature of the instruction and exit rather than entrance requirements. Such defining characteristics have been often enumerated in the professional literature (Elam 1971, AACTE 1974, Houston 1974, Norton et al. 1978).

Into the methodological components of three awards--Associate Diploma in Further Education, Diploma of Teaching (Further Education) and Graduate Diploma in Further Education--were substituted learning experiences contained within a series of performance-based modules. These materials had been developed and field-tested over a ten year period at The Ohio State University in the USA (Hamilton and Quinn 1978). Particular modules were selected to address those instructional competencies already nationally accredited within the traditional awards.

As each of these awards was offered on an external and internal basis, there were basically four models of program in operation:

1. For teachers within the Adelaide metropolitan area;
2. For teachers in South Australian regional centers and Darwin Community College;
3. For trainers employed by Bougainville Copper Limited on Bougainville Island, Papua New Guinea (a special contract); and
4. For individual teachers scattered around Australia.

The PBTE modules formed the main basis for instruction. Depending upon the location of the teachers, the modules were supported as much as possible by Adelaide College faculty counselling, weekly group seminars, written and audio-visual resources, considerable peer group interaction and practice teaching, on-site resource person guidance, videotapes or audiotapes of their own performance, and their own students' feedback. Assessment used performance as the main source of evidence of competency attainment. Performance at mastery level was determined in a more objective manner than general observation through using checklists of criteria in each of the modules. Adelaide College faculty were the assessors, either on visits to actual teaching situations at the teachers' own workplaces or, in the case of many external students,

viewing videotapes of performance. Teachers invited faculty to visit whenever they felt ready to demonstrate mastery attainment of one, two or three competencies. Rate of progress was determined by demonstrated competency. A teacher continued the program into the next term if the number of specified competencies had not been completed. Completion of a course (cluster of several competencies) was registered with the College by means of the term, "satisfactory".

Implementation issues

Throughout 1979, the first year of the PBTE programs, a major evaluation was conducted as part of a national research project, funded by the Tertiary Education Commission. This evaluation found, inter alia, that any ineffectiveness in the programs related to the method of implementation rather than to any intrinsic failing of the PBTE philosophy per se. One of the main conclusions of the report was that careful attention had to be given to strategies that affected the successful introduction and operation of PBTE programs within particular institutional contexts (Hobart and Harris 1980: 162). A less extensive evaluation was carried out at the end of the second year.

As a result of the experience of operating and evaluating the PBTE programs, several specific suggestions may be made concerning strategies for implementing a PBTE model.

1. Student teachers need to be introduced carefully to the performance-based approach. Not only are there different types of self-paced, individualized materials to be handled, but also different concepts and orientations to become accustomed to, such as mastery learning in place of simply passing, and further practice instead of failure.
2. The class should work as a group for at least the first two or three modules so that all student teachers together learn how to gain maximum benefit from the self-paced, modularised materials as well as from the variety of approaches that may be employed in working towards the required outcomes. There is a tendency for both teacher educators and student teachers to overestimate students' capabilities in self-paced learning and self-direction.
3. A PBTE program should contain that level of structure needed to support and encourage the student through the program and assist him/her to cope with the competing demands of an in-service learning situation which may retard student progress if left in an excessively autonomous self-learning situation. This may involve regular and adequate timetabled sessions over the whole program. It is essential that teacher educators always be available at those times.

4. The PBTE modules should be complemented with a range of "input" sessions, such as large group presentations and small group discussions, as well as additional handout materials and local samples. The modules require both human and material support.

   Furthermore, adult students prefer variety in their learning experiences. Excessive dependence, therefore, upon the PBTE modules as the principal learning system is not to be recommended. The program should be characterised by the variety needed to meet individual differences and by human interaction.

5. Emphasis in the PBTE program should be placed on attainment of the outcome, i.e., mastery attainment of the specified competency, rather than on the means whereby the competency is developed. What tends to occur is that student teachers progressively perceive the means to the end, i.e., the completion of a particular module, as the important aspect rather than the end in itself, i.e., the demonstration of a verified professional competency.

6. Some degree of student choice of competencies to be attained should be built into the PBTE program. This permits greater occupational relevance for individual students, particularly since no occupational analysis of the role of the TAFE teacher has been undertaken in Australia. The extent of student choice

becomes increasingly important to the degree that the class is not homogeneous in terms of role and employment situation .

7. Frequent use of videotaping in peer group practices at the teacher education institution should be incorporated into a PBTE program. It is recommended as a very valuable method of developing the skills of self-analysis and of designing strategies for self-improvement.
8. Student teachers should be encouraged on occasions to perform two or three competencies at the one teaching session, provided that these skills are compatible with each other (e.g., oral questioning with demonstrating a concept or principle). The advantages of combining competencies in this way include the development of a more holistic concept of teaching by the student teacher and a more realist presentation in any teaching episode.

   Excessive combination, however makes it difficult for both the student teacher and the resource person to focus carefully on all elements involved in the set of competencies.
9. Reinforcement of attained competencies should be given throughout the total PBTE program. For example, student teachers who have demonstrated mastery in writing objectives, developing lesson plans or introducing a lesson should be expected to continue

demonstrating those competencies within any subsequent teaching episode, even though that episode may be focussing specifically on the demonstration of some other competency.

10. The most crucial element in a PBTE program is the clear description of expected outcomes and the demonstration of these by the student teacher at a mastery level. While other elements of a PBTE program that relate to the process are important - such as accommodating individual differences and preferred learning styles, etc., - the program will only generate the excellence required by the profession if the teacher educator insists upon the attainment of that excellence through the process of mastery learning. Without such insistence, a PBTE programme may well suffer the same criticisms that proponents of the approach have ascribed to traditional skills development programs.

Favorable factors in the program's implementation

The results of the evaluations of the PBTE programs indicate that the model has been perceived as effective, that the materials have been considered suitable as a means of delivery, and that the participant groups have described their experiences with the performance-based approach as valuable. There are several factors that account for the degree of success that the PBTE programs have thus far enjoyed.

1. The thorough research and development that went into the production of the PBTE materials. These high quality materials have been purchased by over 1,350 agencies and 250 individuals in all 50 U.S. states, 5 U.S. territories, 11 Canadian provinces, and 24 foreign countries (Adams et al., 1981), an indication of the very wide distribution of these materials since March 1977.
2. The PBTE experience, conviction and enthusiasm of the program leader. This factor has been instrumental in the success of other PBTE programs such as Temple University in Philadelphia, The University of Central Florida in Orlando, and the University of Houston in Texas.
3. The willingness of the majority of the faculty to parent the model in its infancy at such short notice.
4. The establishment of Adelaide College as the Australian distributor of the PBTE materials, acting on behalf of the American Association for Vocational Instructional Materials in Athens, Georgia. This arrangement ensured a readily available and accessible stock of materials.
5. Receptiveness of the administration of the State Department of Further Education to the approach, and its concurrence in the formation of a TAFE college-based advisory network of local resource persons.

6. Federal funding from the TAFE Council which allowed the development or purchase of materials, establishment of the TAFE resource centre and videotaping facilities, and research on the verification of teaching competencies required by various levels of TAFE staff in South Australia.
7. Funding from the Bougainville Copper Limited Company for that particular PBTE program.

Conclusion

This paper has outlined one department's search for quality in its theory and practice of teaching programs. The gestation period prior to the implementation of the PBTE programs was very brief. While this mode of implementation is not recommended by, and therefore not detailed in, the annals of educational innovation, it often tends to be the model adopted by or forced upon educational institutions. Though the PBTE literature abounds with warnings that "overly hasty installations of the approach...will only produce setbacks (Gage and Winne 1975: 172), this case study has been an example of "rolling change " (Fardig et al. 1977: 12), of revision and refinement as experience has been gained and formative data collected.

These experiences and data have led to the following conclusions on the PBTE programs at Adelaide College:

- The PBTE model, based upon the identified competencies needed by vocational education teachers (Cotrell et al. 1972), has furnished a systematic approach to the development of instructional skills, and programs with greater content validity (Tuxworth 1977) than those in the traditional model.
- The performance-based modules, with their explicit criteria and requirement for mastery performance, have provided a sound basis for the evaluation of competency attainment. Faculty are now able to fulfil more effectively their supervisory role in the field.
- The capability of the PBTE programs to individualize and personalize learning has enabled faculty to meet more satisfactorily the great diversity of needs among adult educators enrolled in the awards.
- The self-paced and almost self-contained nature of the PBTE materials have allowed faculty to accommodate more adequately the needs of external students scattered throughout Australia and Papua New Guinea.

It is in this way that the TAFE teacher education programs at Adelaide College of the Arts and Education have gone a fair way towards addressing the four major inadequacies that they were experiencing in their traditional form. Moreover, these programs now more truly reflect the sentiments expressed in

the recommendations of the 1978 and 1979 TAFEC reports. The telling words of Smith and Nagel (1979:195) from San Diego State University form an apt conclusion for this paper:

> Anyone who has used a [P]BTE approach effectively can never return to a traditional way of teaching.

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PAPER 5

THE UMBILICAL CORD LINKING TEACHER EDUCATION AND INDUSTRIAL STAFF DEVELOPMENT: AN AUSTRALIAN-PAPUA NEW GUINEAN CASE STUDY

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Teacher education is one of those beasts which seem to be perenially under attack. If it lurks within the shadow of educational change so as to perform its public function without rocking boats, it comes under fire for being too conservative and traditional. If it is inspired to set the pace and adopt new approaches, it is tagged as a bandwagon jumper or fad follower.

The central tenet of this paper is that teacher education should be at the cutting edge of change. Experimenting with new approaches and ideas--some label them "fads"--is a challenge to improve education. While not all innovations succeed, each plays its part (Knowles, 1979) in the move toward a more equitable and fulfilling educational enterprise.

Three current initiatives in Western educational circles are performance-based teacher education (PBTE) or competency-based staff development (CBSD), industry trainer training, and external studies or outreach programs. In light of the recent cry for schools/departments of education to adopt new roles and missions (Burch, 1980; Smith, 1980; Roth, 1981), the purpose of the paper is to outline a particular program at Adelaide College of the Arts and Education in Adelaide, South Australia,

to which all three labels may be applied. This program, a staff development exercise for industry trainers in a company approximately 2,500 miles from the academic institution, is analysed in terms of the principles of PBTE/CBSD.

Background and program description

Late in 1978, Bougainville Copper Limited (BCL) in Papua New Guinea, through the initiative of its Training Superintendent, approached the Adelaide College of the Arts and Education to undertake a staff development program for its trainers. Within that company's training center were 22 expatriate staff who were training national apprentices for occupations required by the company. Most of these staff had no previous instructional training. Agreement was reached for these trainers to enroll as external students in Adelaide programs and for the college to be annually reimbursed by BCL for the salary of one faculty member, 4-5 two-week visits by one faculty member to Bougainville, and certain resources including clerical assistance.

The PBTE/CBSD program commenced in February 1979 and is now in its third year. Three levels of training have been in operation, the highest resulting in the award of a bachelor's degree. Each of the courses is designed to lead into the next level. Three trainers had previously received some training, and therefore, were direct entrants to the degree course. They were utilized in the first year as on-site resource persons, each one responsible for tutoring approximately six peers in

the other two levels of training. In the second year, two outstanding students from the initial year also acted as local resource persons for new entrants.

Program analysis in terms of PBTE/CBSD principles

The principles of PBTE/CBSD have been often enumerated in the professional literature (Elam, 1971; Weber, 1973; AACTE, 1974; Houston, 1974; Hall and Jones, 1976; Fardig et al., 1977; Norton et al., 1978; Harrington et al., 1978). Usually they are categorized into three groups: essential elements; implied characteristics; and related and desirable features. The program is analysed below in terms of these three groups.

(a) Essential Elements

- The competencies to be mastered by the BCL trainers were role-derived, specifically stated and made public. These competencies were included among the 384 performance elements identified by Cotrell and others (1972) as describing the total professional responsibilities of a vocational-technical teacher. Depending upon the course, the trainers were required to complete successfully up to half of the 100 PBTE modules which were developed by the National Center for Research in Vocational Education (NCRVE) in Columbus, Ohio to address these 384 performance elements. The modules clearly defined the competencies to be mastered, and the content of the overall program was outlined to the trainers on a Competency Profile Chart before they started. The number and type of com-

petencies were selected by Adelaide College faculty within the broad guidelines on which the original traditional course had been nationally accredited.

- The criteria for assessment of the competencies were made explicit through use of the PBTE modules, and both criteria and mastery levels were known to the trainers throughout their study.
- The instructional program was designed to develop and evaluate each trainer's achievement of the specified competencies. Supporting the modules, which served as the primary base for the instructional system, were Adelaide faculty counselling, small group seminars, written and audiovisual resources, considerable peer group interaction, on-site resource person guidance, videotapes or audiotapes of their own performances, and student feedback.
- Assessment used performance as the major source of evidence of competency attainment. Individuals practiced the required competencies with peer groups, until an on-site resource person was satisfied that performance was at mastery level. There were then two means of testing out: either a videotape of the session was sent to Adelaide College for faculty to critique and assess, or actual observations were undertaken by Adelaide faculty when they visited the site. At all times, the module assessment forms were the instruments used. If a

performance was not judged to be at a good or excellent standard, the trainer was given detailed feedback and requested to repeat the exercise after completing some extra activity or practice.

- Rate of progress through the program was determined by demonstrated competency, not by time or course completion. Without the constraints of time-based course work, several of the trainers were able to complete awards well before the customary two- or three-years stipulation. A few trainers, in fact, began the second award as soon as they had completed the first without even waiting for formal College granting of the parchment or official enrollment. These were academic formalities which could be completed by faculty at times when the College wanted them to be accomplished without any detriment to the progress of the trainers.

(b) Implied characteristics

- The learning materials and methods, rate of progress and module sequencing were all individualized components in the program. The modular, individualized approach allowed those who wished to do so, to work on their programs throughout the whole year rather than during only the 9 month academic year. Annual leave or work trips could be taken at any time, and study slotted around such breaks. Moreover, the year's end meant little to the trainer; he/she was simply granted, to meet College

regulations, the number of credits proportional to the amount of "traditional courses" he/she had completed by the time grades were required by the registrar.

- The trainers' professional development was continually guided by feedback--from college faculty, peer groups, local resource persons and students, from feedback sections in the modules, and from videotapes which were found to be valuable tools for self-analysis.
- The program's focus was on exit, not on entrance, requirements. Mastery of the specified competencies was continually stressed, and those who wished to participate were enrolled irrespective of number of years of formal schooling, training or industrial experience.
- The program of competencies was modularized. The NCRVE materials were utilized because the development of a competency-based delivery system for Australian use would have been a time-consuming and expensive exercise. These materials were known to have been thoroughly researched and field-tested and were readily available from the publisher, American Association for Vocational Instructional Materials (AAVIM) in Athens, Georgia. In addition, they were developed as almost self-contained units, which was an important factor to consider in the case of this remote site. The modularization of these materials increased the opportunities for individualizing

and personalizing the program, as well as for self-pacing, self-sequencing, independent study, and alternative learning modes.

(c) Related and desirable features

- The total program was field-centered. The trainers were not required to travel to Adelaide, but instead, faculty visited them and spent all of the time counselling, observing and tutoring within the BCL training center. Practice and testing out sessions were always performed with their own trainees in actual training settings ranging from illustrated talks in the classroom to demonstration of manipulative skills on R-170 Euclid trucks near the mine face itself.
- Trainers had a part in designing the instructional system. While accreditation guidelines were required to be observed, there was provision for the trainers to select certain competencies as electives. Since their roles ranged from training superintendent to work shop instructor, it was evident that individuals required the elective component to satisfy particular needs. Furthermore, there were different learning routes that could be travelled by individuals to reach the same destination--that is, the module terminal objective. Sequencing of the competencies, too, was at an individual's discretion.
- The program was inservice in character, underlining the philosophy that professional role development is a con-

tinuing process. The three courses were structured on a step ladder approach leading to increasingly sophisticated competencies such as conducting occupational analyses, evaluating programs, and developing personal philosophies of education. Through continual emphasis on self-analysis, evaluation of instructional effectiveness and the design of strategies for self-improvement, as well as on peer group interaction and feedback, a foundation for continuing professional development as a trainer was inculcated.

- Role integration was gradually reinforced. From the attainment of excellent standards on specific skills, the trainers progressed through phases in which combinations of competencies were required to be demonstrated, thereby reinforcing skills mastered earlier in the program. For example, each time an implementation skill (demonstrating a concept) was performed, the trainer was also expected to maintain excellence on skills developed earlier such as developing lesson plans, developing objectives, and introducing and summarizing a lesson. In this way, a more holistic concept of training was developed and a more realistic presentation of a training episode was accomplished.
- The program has been open and regenerative. Due to the contract nature of a trainer's position at BCL, individuals come and go. If a trainer returns to his/her homeland--for instance, England, New Zealand or Australia--the

final requirements of the program may be completed in that country. If a new person enters the program, a local resource person familiar with the PBTE system from among the trainers may be readily found. Trainers may enter or exit from the program at any time convenient to them. Statistics collected by the Training Superintendent have shown that the company actually saves money on this program, despite the outlays mentioned earlier, through not having to recruit staff so frequently. Desiring to continue in the program at the training center, some individuals have elected to remain at Bougainville past their initial contract period.

Evaluation of the program

Given the vast distance between awarding institution and target population, this approach was in the faculty's opinion the most effective way such a staff development exercise could be undertaken. Its particular strength lies in the fact that it adheres to virtually all PBTE/CBSD principles.

There are, however, at least four main limitations on the BCL program:

(1) no formal job analysis was undertaken of training roles specifically within the BCL company. Program content was primarily determined by Adelaide faculty.

(2) there has been a lack of relevant resources on the remote island to supplement the PBTE materials. These resources and models are slowly being gathered.

(3) the tyranny of distance has continued to plague the program in terms of the very slow movement of materials, assignments and feedback between sites.

(4) the program depends heavily upon continued funding from the company.

Reports on the program are made in writing by each faculty member after a visit to Bougainville. These documents serve both as formative evaluations of the program and as familiarization aids for the next visiting faculty. In addition to these "in-house" reports, evidence filtering through from Bougainville tends to support the program's effectiveness--that more company electrician apprentices than previously have passed Papua New Guinean licensing examinations (such successes being attributed by the trainers to their increased competency through the PBTE/CBSD program); that personnel from sections other than the training center have entered the program voluntarily since its inception; and that the company hierarchy has continued to fund the program each year and has stipulated that any national instructors entering the training center participate in the Adelaide project despite their recent completion of one year's fulltime teacher training within the Papua New Guinean system.

More formal evaluation was undertaken at the end of the first year as part of a larger research study across three Australian states on the potential of PBTE in Australia and the suitability of the NCRVE materials for the Australian context (Hobart and Harris, 1980). Cross tabulation of research data

by site revealed that the Bougainville respondents were generally more favorably disposed to the PBTE approach and materials than respondents from on-campus programs in Sydney, Melbourne and Adelaide, despite the difficulties of that first year in establishing such a program so far away.

Conclusion

This paper has analysed a trainer staff development program, implemented within a large mining company in Papua New Guinea and operated by faculty from Adelaide, South Australia, in terms of the principles of PBTE/CBSD derived from the literature. From experience with the program and this analysis of its operation, the author concludes with four main points.

Firstly, the program has been a successful example of the implementation of PBTE/CBSD principles and practices. Secondly, the program may be recommended as one worthwhile approach to the staff development of industrial trainers. Thirdly, the program has revealed that many of the PBTE materials developed at the NCRVE and published by AAVIM, though designed for vocational teachers in secondary and post-secondary educational institutions, are also basically applicable to settings which are industrial in nature and non-American in cultural orientation. And lastly, the program and the materials may be recommended for any educational or training endeavor which necessarily must occur in an off-campus mode and at a distance.

Acknowledgement note

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PAPER 6

PROFESSIONAL DEVELOPMENT OF OCCUPATIONAL EDUCATORS AND INDUSTRIAL TRAINERS: AN AUSTRALIAN CASE STUDY

The professional development of post-secondary occupational educators and industrial trainers has long been a subject of discussion though only recently a focus for experimentation and research. Worldwide ideas on the significance of lifelong or recurrent education, on the relevance of education and responsiveness of its systems to meet social and technological changes, and on the changing basis for the authority of teachers have generated renewed interest in the preparation and continuing professional development of educators and trainers (OECD 1974, Fordham and Ainley 1980). In addition, the recent concern for quality in education, following an era of rapid expansion of facilities and programs, has prompted close attention to the abilities of educational personnel (Harrington et al. 1978, Auchmuty 1980). As a result, traditional methods of developing instructional competencies are increasingly being questioned and novel approaches attempted (Crabtree, 1980, Friedman et al. 1980, Norton 1981).

One such model of staff development which seeks to accommodate these increasing concerns for quality and relevance is the competency-based (CB) approach. This model is characterized by a highly individualized program of learning experiences which focuses on the mastery attain-

ment of role-derived competencies in actual instructional situations. While there have been several evaluation studies on this model in North America, only one in the post-secondary occupational field has been undertaken in Australia. This study was undertaken from within Adelaide College of the Arts and Education, South Australia, and was funded by a grant from the Australian Tertiary Education Commission. The research is summarized in the following analysis.

Objectives

The five main objectives of the study were:

1. to evaluate the effectiveness of the CB model for the professional development of post-secondary occupational educators and industrial trainers in Australia;
2. to describe the reactions of participants in the CB programs;
3. to outline institutional constraints in their operation;
4. to determine the suitability of the National Center for Research in Vocational Education modules (Hamilton and Quinn 1978) for use in Australia; and
5. to describe the reactions of resource persons and field supervisors to their role in the CB programs.

Procedure

One institution concerned with technical teacher training in each of three Australian states introduced during the academic year of 1979 a CB program into the instructional methodology component of its existing course. In total, the CB programs involved 145 trainers, 12 resource persons (faculty) and 28 field supervisors. Twenty-two trainees were actually undertaking their studies externally from Bougainville, Papua New Guinea (Harris, 1981). Almost all trainees were already employed in post-secondary education and industry training roles. Approximately half were in trade or technician fields, with one fifth in each of the business studies and industrial training areas. Sixty percent of the trainees were 30 or more years of age.

The programs were constantly monitored by means of various instruments, including pre- and post-estimate of performance forms, module feedback questionnaires, program evaluation questionnaires, interviews and evaluation workshops. An Advisory Committee provided technical advice on the research. Response rates for the program evaluation questionnaires were 82% for trainees, 100% for resource persons and 86% for field supervisors. The latter personnel were master instructors in the trainees' own institutions.

Analysis of data

This section summarizes the main findings related to each of the five objectives. Detailed analysis of results may be found in the full report of the research (Hobart and Harris 1980).

1. Effectiveness of the PB model

Data from the three participant groups indicated that the majority considered the overall model effective as a means of developing instructional competencies. Almost three quarters expressed a positive attitude to the programs in terms of effectiveness. Moreover, just on 90% believed that a significant proportion of the competencies in the programs was developed to a mastery standard, though resource persons were less positive in their ratings than were the other two groups. With respect to maintenance, three quarters estimated that a significant proportion of competencies was being maintained at this standard in the normal course of their training.

A further dimension of effectiveness was participant opinion on a comparative basis with traditional technical teacher training. Overall opinions were evenly divided. One third of the participants considered that both programs were equally effective. In regard to

preference, trainees were evenly divided on the merits of the two types of programs, while the responses of both resource persons and supervisors reflected quite strong preference for the CB model in terms of its effectiveness in developing trainees' skills. Since all these staff were experienced and well-qualified staff developers with a broad basis in traditional approaches against which to judge the CB programs, their comparative judgments bear serious consideration.

One other dimension on this issue was the analysis of reasons for any ineffectiveness in the CB programs. Data revealed that one third of all participants' reasons related to the method of implementation. Another one quarter of all responses was concerned with trainee learning styles, with the two staff groups more strongly highlighting this factor. It is significant for discussions on effectiveness of the CB model that a mere six responses (all from trainees) questioned the principle of mastery learning, the element at the very heart of the competency-based approach.

As well as directly asking participants for their opinions, an attempt was made to measure the effectiveness of the delivery system by means of pre-and post-estimates of performance on the more common modules. Trainee ability to perform specified module competencies, as measured by these pre- and post -

estimates, increased for each of the nine modules on which analysis was under taken. Statistically significant differences were found between pre- and post-estimate scores for each of these modules, as well as for all modules considered as a whole. These data revealed that the PB materials, as a delivery system, were seen by trainees as effective in developing specified competencies. It is recognised, however, that this conclusion is subject to the limitations inherent in self-report data.

2. Reactions of participants in the CB Programs

That criticism of the programs was not primarily directed at the CB approach was evidenced by firm commitment on the part of the vast majority of participants to the mastery learning concept, the opinion that stipulated competencies were relevant to trainees' occupational needs, and satisfaction with those competencies which had been made compulsory. Furthermore, two-thirds of participants believed that the required modules represented a justifiable workload, and most expressed satisfaction with the degree of freedom to select module sequence.

While these elements were received favorably, however, a strong desire was expressed by participants for a more structured CB program. It is clear from data that

trainees had been left too much on their own with the materials, with two-thirds of their time spent on independent study of the modules. Closer analysis revealed that where the CB programs involved greater proportions of time with human resources, such as contact with resource persons and interaction in peer groups, trainees' ratings of satisfaction tended to be higher.

An aspect of the CB programs where confusion apparently existed among trainees was the overall grading system. As a consequence, some dissatisfaction was felt in this area, and reasons revolved around an unwillingness to relinquish traditional methods which allowed trainees to compare their performances against each other (norm-referenced) instead of against a predetermined standard (criterion-referenced).

Despite these areas of criticism, 71% of trainees and 92% of resource persons indicated that they would like to see the same amount or more CB studies in their professional development courses.

3. Institutional considerations in the operation of CB programs

The study unearthed several issues connected with the introduction and operation of the CB programs. In

most cases, these issues related to discrepancies between the needs and expectations of the training institutions and staff, and the time or other resources available to the trainees.

One set of constraints centered on attendance requirements and timetabling considerations. Restricted study release for some trainees and tight timetabling led in some instances to compromising the standard of mastery. Resource persons sometimes felt reluctant to "recycle" trainees as often as they should have in order to insist on mastery attainment of competencies. Alternatively, on occasions it was the principle of demonstrating mastery in an actual training situation which had to be compromised. In these cases, practice and final demonstration sessions were under taken before a peer group in the training college. This arrangement, however, increased the number of microteaching sessions required, thereby further exacerbating difficulties associated with session times, access to facilities and resource person time. One other timetabling constraint was the compromising with some individuals of the principle of self-pacing to ensure that they completed by the end of the academic year.

A second set of considerations focused upon resource factors. The lack of adequate microteaching

space and facilities was keenly felt, as was the dearth of videotaped models of trainees performing competencies to mastery standard. With regard to written support resources, high proportions of trainees considered these to be "rarely" or only "sometimes" available. Fortunately, the other central resources in a CB program--resource persons and peer groups--were estimated to be available at most times.

A third category was associated with supervision procedures. The lack of a field-based supervisory system in two states was one of the major constraints limiting the effectiveness of the CB programs. On the one hand, it meant that the trainee did not receive adequate field monitoring on the development of specific competencies; on the other, it meant that, once a competency was mastered, there was no mechanism through which subsequent performances of the same skill could be reinforced. Other constraints reported were the lack of adequate and appropriate CB training of the field supervisors (in the one state they were utilised), lack of written and videotaped materials readily available in the field for supervisors to use as support resources, and the fact that the novelty of the CB model meant few colleagues in the field were familiar

with its philosophy and practice. These factors resulted in very little support being available where and when it was most required.

A fourth constraint was concerned with assessment procedures. In some cases, a lack of flexibility was experienced by those in CB programs concerning college modes of assessment and permitted grades. The incongruence between the principle of mastery learning and traditional letter gradings served as an institutional hurdle which resource persons had to overcome in negotiation with senior faculty and registry administrators.

4. Suitability of materials

Suitability for the purposes of this study was examined in terms of six process variables--effectiveness, appropriateness, individualization, clarity, adequacy and autonomy--as well as overall quality. The main instructional components of the CB materials--namely, learning experiences, optional learning activities, feedback sections and additional activities--were perceived by participants as effective. On the dimension of appropriateness, the majority experienced little or no difficulty with non-local examples, level of vocabulary and illustrations. However, many did

encounter difficulty with many American terms used in the modules. That vocabulary was judged to be tuned to the appropriate level of difficulty was an important finding. Often concern over suitability of overseas materials is related more to the least vital aspects of presentation than to the fundamental information contained therein and the medium in which it is expressed.

One of the desirable features of a CB program is that materials are individualized. Various findings attested to this characteristic. Trainees, for example, spend widely varying amounts of time completing individual modules, they made varying numbers of visits to resource people seeking assistance, and they felt varying degrees of need to complete the modules' optional activities.

The data on two further variables--clarity and adequacy--revealed that almost all participants considered the modules' objectives and information to be clear, and the modules' content, directions and criteria to be adequate. The very high proportion of all participants claiming the criteria checklist to be adequate for measuring achievement of module objectives is very significant, and underscores the fact that this checklist is a crucial element in the CB model and is recognised as such by the vast majority of trainees and resource persons.

Results on the sixth variable showed significant use of and referral to additional materials, indicating that the modules were perceived to require support. This assistance came in oral, visual and written forms, examples of which included formal group sessions, films, videotapes, overhead transparency samples, handouts from an earlier induction course, and other books, plans and papers from colleagues in the field.

In terms of overall quality, the majority of participants judged the modules to be good to very good. It was noted, however, that 72% of the staff considered that the modules required slight revision, and 22% substantial revision, in order to be even more suitable in the Australian context.

5. Reactions of staff to their role

While program structure, physical resources and learning materials are important, what is of even more fundamental significance in a CB program is competent educators to fulfill the role of "resource person"--as advisor, helper and evaluator.

The results indicated that three-quarters of the resource persons perceived their role as being "considerably" or "very markedly" different from the role they had performed in previous years within conventional

programs. Far fewer of the field supervisors gave this response, indicating that either the supervisory function in the field institution does not greatly depend upon the nature of the program in the training college, or the supervisors, because of their inadequate induction to the new program,were largely uninformed about their CB role and remained operative within familiar role boundaries.

The most important change was that, for almost all the resource persons and over half the supervisors, their repertoire of instructional skills was reported to have increased as a result of their CB experience. Another of the more evident changes was the adherence to the principle of mastery learning, to which all staff expressed agreement.

Despite the role changes perceived by resource persons, three-quarters of them claimed that they felt comfortable in their new CB role. Any discomfort generally centered on two aspects: feeling of loss of formal contact and difficulty of immediately responding to trainee needs. The former feeling resulted from the change in emphasis from teacher-centered to student-centered instruction which led to a sense of not being

wanted or needed as much as before; the latter feeling arose because the resource persons were relatively unfamiliar with the materials during the year of the research. Conversely, while few supervisors admitted a substantial change in role, as many as 11 felt "uncomfortable" in their new role. The predominant reasons for role conflict in their case were lack of understanding of the CB model and lack of time to acquaint themselves with, then fulfill, the requirements of the role of a CB field supervisor.

In terms of load, the field supervisors were quite adamant that the CB program demanded a heavier supervisory function than that of previous years. Given that they believed their role differed little from that of other years, it appears that the CB experience affected the quantity of work of supervisors rather than the modus operandi of their role.

Even though the CB programs demanded new roles, it is significant that all of the resource persons, and all except four of the supervisors, enjoyed their CB experience. Moreover, almost all staff acknowledged the value of the checklists of assessment criteria in their quest for more effective supervision and assessment of training procedures. It is also interesting that only one of the 36 staff would not recommend the CB model to colleagues.

Conclusions

The findings from this study lead to conclusions at three different levels--the PB model *per se*, the components of the model (resource persons, supporting resources and trainees), and the actual operation of the PB program.

Firstly, the results indicate that the CB programs were felt to be effective, that the materials were considered to be suitable as a means of delivery and that the participant groups described their experiences within the CB approach as valuable. It is on the basis of these findings that the authors conclude that the CB model holds considerable potential for the professional development of post-secondary educators and industrial trainers in Australia.

Secondly, detailed analysis of data persuades the authors to place a *caveat* on a generalized recommendation for the adoption of the CB model in these fields. It is evident from this research that certain conditions need to be met with respect to the components of the CB model before an effective program can be assured. Thus the authors conclude that the potential of the model depends on appropriate measures being taken in relation to the effective induction of resource persons and field supervisors, the adequate provision of materials and resources, and a significant level of learning support for trainees.

Thirdly, analysis of criticisms and judgments made by the three participant groups reveals that the success of such a system is significantly affected by specific factors relating to its implementation and continued operation. Such feedback leads to the conclusion that careful attention must be paid to strategies that affect the successful introduction and operation of the CB model within particular institutional contexts.

It is with these conclusions in mind that Adelaide College during 1980-81 has been modifying its professional development CB program. It is one of the principles of the CB model that programs, being systemic, be altered on the basis of feedback. Changes that have been instituted include the formation of a supervisory network in field institutions, comprehensive training for supervisors and resource persons, more adequate staffing of the program, familiarization sessions in field institutions, development of model resources, establishment of a resource center in the training institution, appropriate induction of trainees to the CB model and a more structured CB program.

The overall findings of this study point to the conclusion that important changes need to be made within traditional staff training institutions. The CB model is demanding of the institution that adopts it and institutional change will be required if such a professional development model for post-secondary educators and industrial trainers is to be implemented effectively.

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PAPER 7

A COMPARATIVE ANALYSIS OF COMPETENCY-BASED TEACHER EDUCATION IN THE USA AND AUSTRALIA

Onto the teacher education rostrum of the late 1960s strode a new movement in the USA: competency (or performance)-based teacher education (CBTE or PBTE). Conditions were in its favor; CBTE, it appears, was born under favorable stars. Not everyone approved of the baby, but then, "the innovation that sooner or later arouses no resistance must be extremely trivial" (Hall and Jones, 1976:351).

This model of teacher education evolved from a complex set of circumstances and trends (Elam 1971; Weber et al. 1973; Hall and Jones 1976; Cooper 1980; Keenan 1981). In the educational scene, several trends coalesced around this time, including increasing dissatisfaction with current teacher education models, questioning of the relevance of college education, moves away from group instruction to individualization and personalization of learning, and a growing acceptance and application of approaches emanating from the behavioral psychology school. At the same time, a levelling off in school population and hence decline in the demands upon teacher education, thereby providing educators with opportunities to focus on their programs and products, the public demand for greater accountability, and the introduction of new concepts of management (e.g. systems theory) and new techniques and resources from business and industry, created a climate of educational experimentation. Educators were ready for it. Advances had been made in evaluation and assessment procedures, in knowledge of teacher characteristics, and in research into the art of teaching.

The significant catalyst in this situation was federal funding. Injection of funds during the last half of the 1960's had led to the establishment of twenty educational laboratories and eleven research and development centers, stimulated educational research and development, and initiated the ten models for elementary teacher education project. Model developers in this latter project, working in relative independence, submitted proposals in 1968 which emphasized competencies, field-based experiences, and evaluation of student performance (Hall and Jones, 1976; Keenan, 1981). While these proposals formed "the launching pad for the CBTE missile", the atmospheric conditions for the acceptance of CBTE had, at least partially, been already prepared by the relatively widespread use of microteaching in teacher education programs over the previous five years (Cooper, 1980).

While this model has had considerable impact upon teacher education in the USA during the 1970s, what is particularly intriguing is the discrepancy in the state-of-the-CBTE-art between the USA and Australia. The purpose of this paper, therefore, is to explore the CBTE impact in both countries, and to postulate reasons for its current weak influence in Australia.

Impact of CBTE in the USA

There can be little doubt that the influence of competency-based approaches in the USA has been extensive. An indication of this influence may be gauged from the volume of literature, the extensiveness of programs, the number of coordination and

promotional agencies, and the evidence of the effects of performance-based materials on vocational education programs, teachers, students and classrooms.

The number of publications on CBTE increased enormously in the first half of the 1970s. Schmieder acknowledged 22 items in his first bibliography in 1971, and 800 items two years later; in 1976, Cappuzzello and associates identified over 6,000 references (Fardig, 1980). While no comparable figures exist on the number since 1976, there appears to be a continuing but decreased number of CBTE publications in the latter half of that decade (Fardig 1980; Thompson and Levis, 1977). By that period, at least some of the intense heat generated over CBTE earlier in the decade had dissipated, and it is likely that energies of advocates were now being turned from literary battles over philosophy, characteristics, merits and demerits to the practical task of making theories, concepts and rhetoric work. Furthermore, journal editorial policy toward publication of papers on the subject hardened, and demands were made for more thought and rigor in research and writing on competency-based education (Swanson, 1979 : 3).

The theme of CBTE has been adopted by several journals which have devoted complete, or nearly complete, issues to it. Such journals include the Journal of Teacher Education (September 1973, and mini-theme in Summer 1976), Phi Delta Kappan (January 1974), Educational Leadership (January 1974) and the Journal of Industrial Teacher Education (Summer 1975). In addition,

individual articles have appeared in almost every major education periodical. Apart from journals, there have been numerous books and reports on the subject, not only focussing on philosophy and definition, but also on competency identification, experimental and descriptive evaluation, program analysis and implementation guidelines. The tenor of this professional literature has ranged

> from confidence in the concept as a catalyst for rebirth in teacher education to widespread pessimism because of inadequate research to justify such a movement (Berty, 1975).

The impact of CBTE can also be witnessed in the research data on the number of programs in the USA. While the limitations inherent in self-report data need to be kept firmly in mind, surveys (Sandefur and Westbrook, 1978; Sandefur, 1981) of institutions in the American Association of Colleges for Teacher Education (AACTE) in four separate years have revealed tremendous growth (to 1977) followed by a leveling-off (1977-80). Whereas 16% (n=125) of institutions in 1973 were operating programs that "for the most part" could be characterised as CBTE, 52% (n=288) in 1975, 58% (n=398) in 1977, and 59% (n=364) in 1980 were involved in CBTE programs. Asked in 1980 about their future plans, 67% of the CBTE institutions planned to continue with their present programs, 15% planned to increase their involvement with CBTE, and only 4% planned to decrease their involvement. Sandefur's conclusion is that

> responses from the 1980 survey seem to indicate that there will be no significant decline in the involvement of AACTE institutions in CBTE in the immediate future (Sandefur, 1981).

From this last survey, the program areas most frequently utilized in CBTE programs in 1980 remained the same as in 1977, namely Elementary Education, Secondary Education, Special Education and Educational Psychology.

A recent largescale survey (McIntyre and Norris, 1980) of preservice teacher education programs in all 50 US states, 3 US territories and Canada found that nearly 50% of the institutions reported the utilization of a performance or competency-based program. The authors' main conclusion was that "performance/competency-based education is still a vital force in preservice teacher education." A different study (Ervay, 1980) found 41% claiming to have implemented competency-based teacher education programs. These figures tend to corroborate Dickson's claim (1979:19) that five-sixths of all teacher education institutions have expended some energies on CBTE, and about half of all teacher education programs have revealed that their objectives call for the application of training knowledge and skill. By March 1980, Fardig (p.iii) could write that:

> The principles of PBTE are now generally understood and widely accepted (though less widely applied), individualized instructional modules have been available long enough to have been thoroughly put to the test and found successful, and new PBTE programs have emerged in many areas of the country.

A third indicator of the influence of CBTE in the USA is the number and variety of agencies that have been involved in the research, development, coordination and promotion of CBTE. These have ranged from numerous teacher education institutions through research centers such as the Far West Laboratory (San Francisco) and the National Center for Research in Vocational Education (Columbus, OH) to specialized national bodies like the AACTE Committee on PBTE (Washington, DC), The PBTE Information Center (Washington, DC) and The National Commission on PBE (Princeton, NJ), and to multi-state entities like The National Council of States on Inservice Education (formerly the Multi-State Consortium on PBTE at Syracuse, NY), The Southern Consortium (Durham, NC), and the National Consortium of CBE Centers (Tallahassee, FL).

The role of the AACTE Committee from 1970-1977 was particularly vital in stimulating the growth of the movement across teacher education generally (Kay and Massanari, 1977). The National Center, too, has been instrumental in promoting the model since the early 1970s, particularly in vocational teacher education and post-secondary staff development activities. Both agencies have served as incubators for the movement--collecting and disseminating information, stimulating dialogue, giving direction, providing numerous training opportunities, developing materials and providing consultative services.

Further evidence on impact may be gleaned from recent research on the distribution, use and effects of PBTE materials in vocational teacher education. PBTE materials

developed at The National Center for Research in Vocational Education have been purchased by agencies, institutions or individuals in all 50 U.S. states, five U.S. territories, all eleven Canadian provinces and 29 other overseas countries. Altogether, over 1,850 different agencies and 550 individuals have purchased these materials, through more than 5,200 orders, between March 1977 and August 1981 (Harrington 1981). Adams, MacKay and Patton (1981) found that PBTE is having a longterm impact on improving the quality of vocational teachers, that it has changed many aspects of the delivery of vocational teacher education, and that it is providing impetus to the movement toward competency-based instruction for all vocational education students. Their study found that these materials were being implemented in colleges and universities for pre-service and inservice vocational teacher education programs, in secondary schools for inservice programs for practicing teachers, in community colleges for staff development activities, and in such non-education agencies as Caterpillar Tractor Company, IBM and Union Carbide as part of company training programs for improving instructional techniques.

Impact of CBTE in Australia

In contrast to its influence in the USA, the CBTE impact in Australia thus far has been relatively unremarkable. Goldman's analysis (1976) of innovations in Australian teacher education made no reference at all to CBTE. Turney's (1977) comprehensive review on the same topic exposed very few developments in CBTE-

type programs and the author expressed his surprise, considering the strength of the CBTE influence in North America, that the movement had been so slow in finding protagonists in Australia. Hewitson's (1979) summary of research into teacher education, while it included interesting work at a few institutions in the areas of occupational analysis of teaching, the frame-of-reference gap between school supervisors, university faculty and student teachers, microteaching, and development of courses and materials on specific teaching skills, made little reference to CBTE apart from one study (Levis et al.:284-304) at Macquarie University. Thus, evidence on the development and operation of CBTE programs is virtually non-existent, the number of publications relating to CBTE is very slight and the research undertaken on CBTE amounts to a grand total of two studies (Levis et al. 1979; Hobart and Harris 1980).

Considering Turney's air of expectancy in 1977:

> It will be interesting to observe how Australian teacher educators will develop innovative modifications in response to the examples set by competency-based teacher education programs which have become popular in North America in recent years. This would appear to present an exciting challenge to educators...(pp. 152-3)

and given the extent of professional and public debate (Hewitson 1979, Fordham and Ainley 1980) and political scrutiny (TEC 1978 and 1979; Auchmuty 1980) over teacher education and staff development, one would perhaps have anticipated more Australian educators to have taken up the gauntlet of performance-based approaches. Particularly is this the case when micro-teaching, which has been viewed as the forerunner to the

American CBTE movement--as the nightclub "warm-up act...for the star performer" (Cooper 1980)--has been prevalent in Australian teacher education and infact was being employed as early as 1972 in 40% of programs (Hewitson, 1979:384). Furthermore, an Australian investigation into technical teacher education specifically recommended that programs be "designed primarily to impart the skills and knowledge required to enable technical teachers to become effective practising teachers" and be "based on an objective assessment of the functions of all categories of technical teachers and the knowledge and skills necessary for the efficient and effective performance of these functions" (TEC, 1978 and 1979).

So why has this challenge been so tardy? A number of possible reasons may be postulated as an answer to this broad question.

a. In so far as the natural science thesis that similar conditions give rise to similar phenomena may be utilized in the analysis of cultural innovation, it is to be noted that several factors conducive to the growth of the CBTE model in the USA are missing in the Australian glasshouse. In particular, the following factors may be cited: the Sputnik (1957) and the later moon-landing (1969) stimuli to education; the maturity of the education profession in terms of evaluation processes and research into the art and science of teaching; the strong, locally-based demands

from the public for educational accountability; the organisational infrastructure of educational laboratories, research and development centers, and national conferences; and the availability of funds from federal authorities and educational foundations and the latter's readiness to invest in programmatic educational research and development.

b. Australians pride themselves on being pioneers and improvisors. Through their history they have thrived on meeting all types of challenges within their own continent. As a consequence, there tends to be an innate resistance to accepting importations, and a scepticism toward innovations from overseas. The consequent slowness in the development of new ideas and resistance to change have been reinforced by such historico-geographical factors as the tyranny of distance, sparse population, and insularity of strongly centralized states.

c. It may be that the goose who laid the golden egg has already bolted--to confuse two metaphors. An innovation like CBTE, which, in the absence of detailed research on cost-benefit analysis, is alleged to involve more costs and more manpower than conventional programs, may have arrived too late into an economic environment which cannot so easily support experimentation as it did a decade ago with such ventures as

alternative schooling, open space classrooms and community education centers.

d. Possibly Australian teacher educators have been discouraged by the American experience of the immense effort required in identification of competencies, development of instructional materials, training staff, convincing administrators and the like. Has the "too much like hard work" syndrome led educators to remain steadfastly within familiar role boundaries?

e. It could be argued that Australia's soil is not sufficiently fertile in the fields where such a philosophy as CBTE is likely to take root most firmly. If vocational-technical teacher education is one of the educational arenas in the USA where PBTE finds its strongest advocates, this component of Australian teacher education is still rather uncoordinated, fragmented and underdeveloped (Fragar 1978). Teacher education for technical and further educators has had, and is still having, a history of getting its house in order, of freeing itself from its much bigger and stronger parent--teacher education for primary and secondary school teachers--and of learning to cry more vociferously in the right quarters for a greater share of recognition and resources. As a result, there has been little space, time and energy left for embracing innovation.

f. Perhaps it takes longer than one expects for innovation to cross the Atlantic or Pacific to Australian shores and to make an impact on the educational scene. A common conviction in Australia, bred from a sense of isolation from European civilization, is that it takes ten years for anything to reach the country. Hall and Jones (1976:352) quote a slice of American folklore that it takes roughly twenty years for an innovation to work into the mainstream of American education. If the combined wisdom of these two beliefs tells us anything, CBTE may be only just beginning, conceived but yet embryonic-it may after all have a future in Australia.

Indications of interest in CBTE in Australia

There have been some indications of an awakening interest in CBTE in Australia. The first manifest sign was the activity generated at Macquarie University in Sydney following the participation of R.B. Howsam in the South Pacific Association for Teacher Education Conference in 1975. As a result of his stimulating address on the development and progress of CBTE in the United States and on the case study of the University of Houston, the Teacher Education Programme at Macquarie University began to incorporate CBTE elements within a number of its courses (Thompson and Levis 1980 : 39). Out of this endeavor came a research project involving the development of competency-based instructional materials and evaluative instruments, and

the experimental evaluation of a CBTE program using student secondary teachers from Macquarie University and pupils from local high schools (Levis et al., 1979). Significantly, this project did receive funding--initially from a Macquarie University research grant and later from the national Education Research and Development Committee.

A second indication of interest in CBTE was the responsiveness of the national Tertiary Education Commission to a research proposal for the evaluation of CBTE for technical and further education teachers in Australia. In the Tertiary Education Commission's Report for the Triennium 1979-81, the Technical and Further Education (TAFE) Council had pressed for a more structured evaluation of TAFE programs and techniques in addition to regular reviews of curricula (TEC 1978). Agreeing with the Council's argument, the Commission recommended that funds be made available to support evaluative studies for the whole tertiary sector. The intent of this proposal was to raise the general quality of tertiary education through promotion of a climate of critical self-assessment within institutions, and encouragement of the development of evaluative skills. Subsequently, the Australian Government endorsed the Commission's recommendation by making available an amount of $180,000 within the funding guidelines for 1979 (TAFEC News 1979). At the second meeting of the Evaluative Studies Committee of the Commission in December 1978, approval was specifically granted for the funding of an evaluation study on CBTE to be directed from the Adelaide College of the Arts and Education (Hobart and Harris 1980).

Further evidence on Australian interest in CBTE may be gleaned from analysis of the distribution of the performance-based materials developed by the National Center for Research in Vocational Education at The Ohio State University, and published by the American Association for Vocational Instructional Materials in Georgia (Harrington 1981). The total amount of module sales to Australia through August 1981 ($57,500) is comparatively high. It is exceeded in the USA only by those to the states of Pennsylvania ($78,000) and Ohio ($61,000), and surpasses those to the next ranking states with sales of over $30,000--Florida, New York, Texas and Washington. The Australian figure far outstrips sales to the five next ranking countries, namely, Canada ($29,000), England ($6,000), Papua New Guinea ($1,500), New Zealand ($940) and Taiwan ($760). When Australia's relatively small population (approximately 15 million), and the few vocational-technical teacher education programs in which the materials could be utilized, are taken into consideration, the sales figures for Australia compare very favorably indeed.

Most of these materials are being used with technical teacher education programs at Adelaide College of the Arts and Education which, in addition to on-campus courses, conducts off-campus programs for students all over Australia and in Papua New Guinea. However, the high Australian sales from 1978 indicate that a small number of agencies and institutions may be using, or contemplating using, them in their teacher education and staff development programs.

Conclusion

Analysis of the CBTE movement in the USA and Australia provides an interesting contrast in terms of its beginnings and its impact. The influence of competency-based approaches has been considerable in the USA, as judged from available evidence on publications, programs, promotional agencies and the effects of PBTE materials. Their impact has been felt not only in teacher education, but increasingly in staff development, vocational education, industry trainer training, adult education, vocational education administrator training, career guidance and development, and other professional areas such as dentistry and medicine.

The impact of competency-based approaches in Australia, on the other hand, has thus far remained minimal. Several reasons have been postulated in this paper. It may be, however, that the increasing demand for educational accountability in tightening economic conditions, the teacher surplus in the face of declining school populations, the cry for relevance from public as well as political sources, and the concern for quality instead of quantity in education, will provide impetus for greater application of competency-based approaches in Australia. Already there are indications that interest has been awakened in the technical teacher education arena. It remains to be seen whether these sporadic activities are signs of spring or of an Indian summer.

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PAPER 8

IS THERE LIFE AFTER PBTE?

"Is performance-based teacher education dead?" a curriculum coordinator at a Michigan community college inquired of me soon after my arrival in the USA. Not being particularly convinced myself of the reply I uttered at that time, I felt compelled to develop a more comprehensive response on paper. To this cryptic question my cryptic reply now would be like that attributed to the survival of many qualities of the religious movement, Shakerism: "The hands drop off, but the work goes on." While the label may be dying, the spirit of performance (or competency)-based teacher education (P/CBTE) lives on.

Whitewashing of the label by program practitioners may occur for a number of reasons. These include the desires to eschew academic debate over which of several labels is the most appropriate, to be more accurate in program description, to be different and novel, and to be considered as more than merely a part of a bandwagon. Undoubtedly, however, the predominant reason is the desire not to antagonize those involved in its implementation and operation. For it would seem that P/CBTE has the properties of a chemical which, through its very catalytic nature, is able to produce reactions that either generate new processes and products or inhibit further experimentation. P/CBTE has the propensity to polarize. On the one hand, many of its advocates have viewed the approach as <u>the</u> panacea for all of teacher education's ills--"the ultimate aspirin for educational headaches" (Piper and Houston, 1980:37)--seeing

in it foolproof solutions to the many varied problems that have beset teacher education for decades. On the other hand, many antagonists in a Thermidorian reaction have denounced the approach as overly product-oriented, narrowly mechanistic and too fragmenting of the teaching art. The battlelines on both sides of the P/CBTE fence--frequently labelled as the camps of humanism and behaviorism--have tended to become so fixed in their positions, rigidly poised on the defensive at the extreme ends of the educational continuum, that their stance allows them to win battles only over straw men. Neither camp, however, succeeds in winning the war.

Rather than reaching a stalemate in this manner, it is perhaps more productive to examine the impact the P/CBTE movement has had upon teacher education, and by implication, education in general. Speculative titles in the literature keep raising the question: "Will the promise of C/PBTE be fulfilled?" (Rosner and Kay, 1974), "CBTE: does it have a past or a future?" (Hertzberg, 1976) and "Does PBTE work?" (Adams, MacKay and Patton, 1981). The replies have ranged in tone from positive:

> "The principles of PBTE are now generally understood and widely accepted (though less widely applied), individualized instructional modules have been available long enough to have been thoroughly put to the test and found successful, and new PBTE programs have emerged in many areas of the country" (Fardig, 1980:iii).

to cautiously affirmative:

> "we need to recognize the limitations of CBTE and communicate them to all participants..and maintain the systems framework for instructional design and revision, fully realizing that, at least for some time, we will not be able to have a completely valid CBTE instructional system" (Dunn, 1980:33).

to negative:

> "...the talismans of the CBTE movement appear to have been implemented only sporadically...Teacher education faculty believe the day of CBTE is largely over. We, in fact, have begun to question the extent to which it ever existed" (Yarger and Joyce, 1977:22).

Given this diversity of opinion in the literature, there would seem to be a need for a synthesis of the effects of P/CBTE thus far. For the movement has left, and is still leaving, a great number of legacies. From this number can be identified six main categories which may be considered as roles of the P/CBTE movement:

1. Conscience-pricker
2. clarifier of educational purpose
3. bridge between theory and practice
4. humanizer of educational process
5. stimulator of research and development
6. change catalyst

Delineation of these roles does not imply that each is independent of the others; the role of change catalyst, for example, may be viewed as subsuming all the other roles. Nor is it suggested that all the legacies analyzed below are necessarily perceived as equally worthwhile by all educators. Moreover, it cannot be claimed that P/CBTE was always <u>totally</u> or <u>directly</u> responsible for all of the following effects. It has been contended, for instance, that some of the shifts in orientation were present in American life in the decade before the advent of P/CBTE, and even as far back as the 1920s (Hertzberg 1967; Mueller 1976).

It is indeed true that P/CBTE incorporates several fundamental principles which, individually, educators have espoused for a long time. The novelty of the P/CBTE model, however, lies in the coalescence of so many of these ideas and the manner in which they have been integrated into a workable program. Therefore, the thesis in this paper is that P/CBTE highlighted the issues generated by these earlier societal trends, stimulated critical thought, debate and reflection, and compelled educators to deal with these issues. P/CBTE was the vehicle by means of which these societal trends were translated from verbiage to educational practice, and as a consequence, received upon its shoulders (still growing and not yet strong) the full weight of criticism from both outright antagonists and doubting Thomases alike. What this paper aims to accomplish, then, is a synthesis of the many effects that may be attributed (though no causal relationships can be proved) to P/CBTE. Its purpose is to demonstrate that, even though the label of P/CBTE may wither or have already withered, the movement's spirit is still likely to be felt in educational circles for a very long time.

1. Conscience-pricker

Just as Illich and the school of deschoolers had earlier burst educational balloons of complacency, so the P/CBTE movement forced teacher educators through the 1970s to analyze critically the goals, processes and products of what they were doing. This pressure was experienced at all levels, from the politico-economic context for teacher education through to the individual teacher educator's course and classroom.

- in an age of "doing more with less" (Schindler-Rainman, 1981:13), were teacher educators working hard enough?
- in an arena of little or no "market competition" to motivate faculty, were teacher educators trying their utmost to offer "better service" to continue to "stay in business" (Peterson and Stakenas, 1981:362)?
- in an organization where there is little incentive to save money because budgeting procedures penalize those who do not spend all allocated funds, were teacher educators really transcending their own parochial interests and striving for greater efficiency for the survival of the institution (Peterson and Stakenas 1981:363)?
- in a program designed to equip students for a professional role, was the content always directed toward making students more effective teachers, or the process modelling the ways in which teacher educators expected <u>their</u> students to teach?
- in a course defined by a limited number of contact hours, was the teacher educator continually realistic about what could be accomplished within that time-frame?
- in a learning group characterized by heterogeneity, was the teacher educator willing and able to address as fully as possible individual abilities, needs and interests?

Such were the tantalizing questions that P/CBTE raised concerning traditional teacher education programs.

2. Clarifier of educational purpose

P/CBTE has been in the forefront of moves to "de-fuzz" teacher education programs.

> "Many who normally sit on the fence and watch the swing of the pendulum have been drawn into the fray. CBE is a concept so sophistocated that to attack it first requires intensive analysis and description of one's position. Analyzing one's position to defend it has to result in new clarity of reason and purpose. This stimulation of thought, discussion, and debate is priceless in and of itself and should be much more a part of our professional lives" (Hall and Jones, 1976:352).

This analytic thinking, introspection and debate has in particular clarified teacher education goals and their evaluation. The collaborative specification of outcomes for students has made both instruction and assessment more relevant to the professional teaching role, rather than their being dependent upon the structure of disciplines or the professors' interests or whims. As a consequence program goals have become both clearer and more public (Austin 1977, Coker 1979, Smith and Nagel 1979). P/CBTE programs have demanded, inter alia, that (a) teaching competencies to be demonstrated by students be role-derived, specified in behavioral terms, and made public, (b) assessment criteria are competency-based, specify mastery levels, and made public, and (c) the instructional program facilitates development and evaluation of those particular competencies (Elam, 1971:8). In this process, educators have had practice at "operationalizing" teacher education. At a more general level, they have also had the opportunity for reconceptualizing teacher education. Most programs had been modified over the years through incremental

creep as new texts were used, technology changed and faculty moved. The P/CBTE model, focusing upon competencies needed by teachers in their professional role, brought fresh insights into the examination of the total program, the relevance of its content and components, and the identification of missing or overlapping studies. P/CBTE has seriously challenged the notion of a smorgasbord of educational fare leading to a magical number of credits as equalling competency in teaching—the "trading stamp" approach (Friedman et al., 1980:12) to professional development where one fills up a stamp book with credits earned which can then be redeemed for a qualification.

3. Bridge between theory and practice

Several elements of P/CBTE programs have led to the lessening of the gulf between theory and practice and to an increased emphasis on carefully planned and supervised field-based experiences. Role-derived competencies have increased content validity (Tuxworth, 1977:41), and have sensitized teacher educators to the need to be practical and to provide a theoretical base for decisions in schools (Dickson 1979). Demonstration of the student's competency in actual teaching situations, and the field-centered nature of P/CBTE programs have both increased the realism of training. Again, the involvement of supervisory teachers in schools has contributed to the development of the student's teaching competency being viewed as a shared responsibility of both teacher educator and school supervisor. P/CBTE has contributed, through its clear specification of

teaching practice outcomes and assessment procedures, to the "frames of reference" (Hewitson, 1979:267-83) of all three participants becoming much more closely aligned.

In this process, the educational decision-making base has been broadened. For example, Toledo's CBTE program brought the university, the public and parochial schools, and the community into various coalitions that worked cooperatively to train pre- and inservice teachers (Dickson, 1979). Evaluation of overall competency is in many institutions now the responsibility not just of an individual teacher educator but of several persons. Temple University in Philadelphia, for example, uses a jury of three persons: teacher educator, senior local administrator and elected local school teacher.

4. Humanizer of educational process

P/CBTE has contributed to the personalization of instruction in several ways. In such a program, a student is held accountable only for learning outcomes, not learning activities, and consequently is able to engage in learning experiences of his/her choice. In most cases, learning is also individualized, self-sequenced and, to a certain extent, self-paced. Most programs allow the student to negotiate, at least partially, the competencies to be demonstrated, as well as the conditions and timing of the assessment. (Weber, Cooper and Houston, 1973: issue 23). Most programs strongly emphasize small group work, peer group teaching, and individual counselling which place students in very close and frequent contact with peers and teacher educators (Fardig, 1980:27-34; Hobart and Harris, 1980:170-1).

The AACTE Committee on PBTE noted on its visits to P/CBTE sites in the USA that this type of program generally resulted in increased interaction between students-faculty, students-students, and students-school staff-college faculty (Kay and Massanari, 1977:21). Hall and Jones (1976:352, 355-6) also report closer relationships between faculty and students, as well as less competition between students as they recognize that they are not being compared with each other, a different and improved relationship between administration and faculty, and considerably more sharing and cooperation among students and faculty. The interesting feature of the University of Georgia study by Flowers and Shearron (1976:280-1) was not that the PBTE program was any better or worse than the non-PBTE program, but that the aspect shown to be improved through the PBTE approach was that of personal development. This is the very area of teacher education which some critics of P/CBTE fear would be harmed. Similarly, Parker's evaluation (1974:324) of Weber State College's program concluded that its humanistic dimension, in terms of interpersonal relationships and graduate confidence, reliance and student-centeredness, was one of its main strengths.

5. Stimulator of research and development

The competency identification and verification process is of crucial importance in the development of P/CBTE programs. Necessarily, therefore, the movement has led to a great many studies on the professional competencies required by teachers

at different educational levels, in different disciplines and in different locales (e.g., Cotrell et al., 1972; Blank, 1979). The movement has also generated considerable research on the effectiveness of such a model (e.g. Enos, 1976; Roth 1977). In a systems approach to instruction, feedback is a very important component at all stages in program development, and there is continual monitoring of the successes and failures of the system. This information provides a data base for the improvement of the program's goals, content and processes.

The emphasis in the P/CBTE model on individualized instruction, self-pacing and self-sequencing as desirable features has promoted a vast amount of materials development. In particular, instructional modules, supervision and assessment instruments, and models of competency attainment have been developed in specialized research organizations such as the National Center for Research in Vocational Education and the American Institutes for Research, as well as in many universities such as Wayne State University, University of Minnesota and Temple University,

The most lasting legacy of P/CBTE in the research arena, however, has been its stimulation of inquiry into the art and science of teaching. Because of its emphasis on the development and evaluation of specific teaching competencies, the movement, while being more vulnerable to criticism than traditional programs because of the lack of evidence on teaching effectiveness, nevertheless by this very openness has provoked investigation in this area (Heath and Nielson, 1974).

> "C/PBTE has been seen as perhaps the only feasible vehicle for expanding the knowledge base of the teaching profession. The focus on identification and validation of competencies for teaching has resulted in the beginnings of an interdependence between teacher behavior research and teacher education. Such interdependence has not seemed to occur with any other educational reform movement" (Kay and Massanari, 1977:23).

6. Change catalyst

The issues that P/CBTE brought to the surface in the 1970's were not altogether new. What this paper is contending is that the role P/CBTE played was to focus the spotlight upon these issues and compel educators to deal with them.

> P/CBTE has been recognized as a unique and powerful catalyst for forcing a close examination of underlying assumptions about the roles and goals and processes of education in general and education personnel preparation in particular (Kay and Massanari, 1977:22).

In this role, P/CBTE acted as a change catalyst. It has stimulated discussion and examination of programs, principles and practices, many alternatives to time-based courses have been experimented with, and there has been increased emphasis on clinical experiences (Hall and Jones, 1976:351). P/CBTE has been demanding of the institutions that have adopted it, and institutional changes have been required to implement this model of teacher education effectively. Such institutional changes have come very slowly and are in fact still being accomplished in many instances. "Changing a university is like trying to rearrange a cemetery", Freud is reported to have once said.

It is not only teacher education institutions that have felt the impact of competency-based approaches. The CBE programs in elementary and secondary schools "may have been directly influenced by the P/CBTE movement" (Kay and Massanari, 1977:16). So, too, may the competency-based vocational education programs in secondary and postsecondary institutions. P/CBTE has influenced staff development in community colleges (Harrington et al., 1978; Norton, 1981), vocational education administrator training (Norton et al, 1977), career guidance and development (NCRVE 1971) and industry trainer training (Hobart and Harris, 1980; Adams et al, 1981; Gayeski, 1981). Furthermore, there is evidence that the competency-based approach has been employed in many programs in general studies, human services, and other professional training areas such as medicine, nursing, dentistry and law (Kay and Massanari, 1977:16-19).

In this flurry of activity, two important educational shifts in emphasis may be underlined as legacies of the competency-based movement. The first is what has been termed an "ideological conversion" (Peterson and Stakenas 1981:362) from concentration upon processes (means) to more consideration of outcomes (ends). The focus upon process leads to a preoccupation with the covering of content in teaching, and to a tendency for means to become ends. In the competency-based approach, however, content is seen as a means for attaining required competencies (ends), and considerable attention

is paid not only what to teach but how students are to learn and apply it.

The second major shift in emphasis has been in the roles of participants in the educational process. Lifelong learning exponents (Dave, 1973; Duke 1976) have for years been writing about the need for teachers to become less the subject-matter experts and more the facilitators and managers of learning, and for learners to become less dependent on teachers and more responsible for their own learning. P/CBTE is an approach that has forced these changes in practice. Teacher educators spend less time lecturing and other kinds of formal instruction, more time in contact with the community, experience more personalized and individualized contact with students, and have diminished autonomy is determining course content and process (Adams et al, 1981; Hobart and Harris 1980). They also spend much more time in program development working in teams, assessing program effectiveness, evaluating student progress, meeting with students in face-to-face situations, reacting to videotaped sessions in feedback, counselling and modelling (Weber, Cooper and Houston 1973:issue 36) In short, the role of the teacher educator becomes that of a "resource person" whose prime functions are as advisor, helper, and evaluator (Hamilton and Quinn, 1978: 25-39). Conversely, C/PBTE has fostered self-evaluation and personal responsibility for learning among students (Adams et al, 1981). With this approach, students are taught to be accountable for the demonstration of learning outcomes.

Conclusion

It is important to remember that C/PBTE as a name does nothing. A C/PBTE program can be as rigid, flexible, mechanical, humanistic, easy, demanding, relevant or useless as any other teacher education model. It depends on the values, beliefs and assumptions of the program leaders. Statements from three geographically separated CBTE practitioners in different educational fields reflect the feelings of those who not only verbally joined the bandwagon in the 1970's but also actively experimented with it as one approach to the improvement of teacher education:

> Anyone who has used a CBTE approach effectively can never return to a traditional way of teaching (San Diego State University, Smith and Nagel, 1979:195).

> We think we are definitely in tune with the times, if not ahead of them. CBTE will continue to be an important component of the educational change process in the years to come, including the difficult, survival years predicted for higher education in the 1980s (University of Toledo, Dickson, 1979:19).

> The vocational teacher education staff...takes considerable professional pride in having worked hard to make the PBTE program move ahead so far, so fast...There is no thought of turning back...our driving concern is to move forward with even greater effectiveness and increased success (University of Central Florida, Fardig, 1980:23).

What really counts in the long run is not whether programs are labelled "competency (or performance)-based", but whether the principles and practices of such a model have made an impact towards the improvement of teacher education, and education

generally. This paper has identified a number of the more significant legacies of C/PBTE, indicating that while the label may be waning or already defunct, its spirit lives on, haunting the complacent, the non-committed, or those whose programs are fading as a result of lack of relevance, flexibility or personalization. It has been found that P/CBTE has helped university vocational education departments survive crises of funding cutbacks and faculty retrenchment (Adams et al., 1981). Because of the individualized approach, they were able to provide field-based programs to larger service areas and thereby maintain enrollment. Moreover, they were able to attract community support and receive state funds for P/CBTE program development. Given the outlook of escalating costs for higher education, declining student demand and a likely lower priority status in relation to other pressing social demands, competency-based programs in higher education may indeed be, as Peterson and Stakenas (1981) contend, the logical means by which institutions can preserve quality, equal opportunity and economy.

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PAPER 9

COMPETENCY-BASED APPROACHES IN AUSTRALIAN POST-SECONDARY EDUCATION: SPRING OR INDIAN SUMMER?

"There is reason to believe that performance-based education will soon be on the rise", forecast Peterson and Stakenas (1981:366) in the Journal of Higher Education. And what is the basis for their belief? Frustration. Frustration on the part of well-intentioned members of state legislatures over the current level of higher education outcomes. Frustration on the part of educational administrators faced with fewer real dollars to support existing programs. These authors contend that educational institutions as a consequence will be compelled to use their resources more efficiently and wisely, and that a performance-based approach can provide elements of solutions to the complex problems that will be facing institutions of higher education in the 1980s.

In Australia, the problems facing educational personnel are similar, at least in kind, to those encountered in the USA. The comparatively rapid expansion through the latter half of the 1960s and the 1970s of first the Advanced Education (CAE) and then the Technical and Further Education (TAFE) sectors of tertiary education has been followed by selective encouragement of particular components of the educational system. Factors leading to more stringent conditions have included a declining student demand, an over-supply of teachers, public demands for more returns from education, political calls for educational accountability and a lesser priority status for particular educational components in relation to other pressing social needs.

Such demographic, social and political factors impinging upon the economic context of education have shifted the emphasis away from educational concerns relating to quantity toward those relating more to quality--quality of staff, quality of instruction, quality of graduate. That this concern for quality has indeed become a priority of the national Tertiary Education Commission is reflected in such moves as the provision of research funds for evaluative studies to raise the calibre of tertiary education in general (TEC, 1978), the reports on TAFE teacher education and the subsequent granting of monies for initiatives in this area (TAFEC, 1978 and 1979a), the National Inquiry into Teacher Education and its concomitant state inquiries whose overall focus was the quality of teacher education (Auchmuty, 1980), and the publication of documents like the TAFE Council's TAFE and Training for Skills which was prepared as "a contribution to the growing debate about how Australia might best train the skilled people it will require in future years" (1979b:iii). Moreover, the Australian Government's response to the report of The Committee of Inquiry into Education and Training (Williams, 1979), announced in November 1979, included several policy objectives relating directly to quality: the qualitative improvement of the TAFE sector, strengthening the teaching of basic skills in schools, improving skills training arrangements, and facilitating the transition of youth from school to work.

A major educational emphasis of the Australian Government has been in the area of increasing the employability of youth.

The intention of the Transition from School to Work Program has been to provide appropriate education and training courses in secondary and post-secondary institutions for those who leave school with poor employment prospects and those still in school who are likely to face similar difficulties when their time comes to leave school. The Education Program for Unemployed Youth, too, was introduced in July 1977 to provide instruction in literacy and numeracy, to promote self-confidence, and to give students some basic vocational skills and a knowledge of job-seeking techniques. Similarly, other programs, administered by the Department of Employment and Youth Affairs, have been established to assist young people in their transition from education to employment (Australian Bureau of Statistics, 1980). The Australian College of Education has also been very much concerned with the relation of education to the world of work (ACE, 1980).

The increasing demand for accountability, concern for quality in education and attention paid to skill training and youth employability may well provide impetus in Australia for a variety of applications of the competency (or performance)-based approach. It is an approach characterized by highly individualized programs of learning experiences which focus upon the mastery attainment of role-derived competencies in actual situations. It is an approach incorporating many features which, individually, educators have been espousing for a long time: clear definition of purposes, field-centered experiences, frequent and immediate feedback, individualized and personalized

instruction, use of many and varied instructional resources, focus on exit requirements (i.e. quality of the product), mastery of occupationally-relevant knowledge, skills and attitudes, and assessment based more on ability to perform than on knowledge exhibited through paper and pencil tests. It is an approach which, when implemented with trained staff in a personalized, humanistic manner, can lead to effective and efficient programs, enjoyable learning experiences, and competent graduates (Enos 1976, Roth 1977, Smith and Nagel 1979, Thompson and Levis 1980, Adams et al. 1981).

The competency-based approach, then, holds considerable potential for many educational and training situations. There have already been some indications of interest in and experimentation with such an approach in Australia (Harris 1981). Whether one believes that these as yet sporadic activities represent signs of spring or Indian summer, there are several areas of education and training where this model could have very useful application. Such areas include the andragogical and professional development, either by teacher education institutions or "in-house" agencies, of staff in educational institutions and industrial training establishments, the training of educational administrators, the vocational training of TAFE college students, and the development of functional literacy and numeracy of adults. Each of these areas of application is now discussed in further detail.

Teacher education

In the arena of teacher education for adult and further educators, the competency-based (CBTE) model has particular advantages. Many practitioners have expressed the need for such features as individualized and personalized instruction, clear and job-relevant objectives, self-paced learning, recognition of prior learning and opportunities for independent study. The diverse backgrounds, teaching specialities, ages, study time opportunities, and work and study locations necessitate a considerable degree of flexibility, and an "allowing for individual differences on a scale unusual in teacher education programmes" (Hermann et al., 1976:118).

The national inquiry into TAFE teacher education (TAFEC, 1978 and 1979a), while discussing these features, also recommended that programs should be:

> designed primarily to impart the skills and knowledge required to enable [TAFE teachers] to become effective practitioners (recommendation 1), and based on an objective assessment of the functions of all categories of TAFE teachers and the knowledge and skills necessary for the efficient and effective performance of these functions (Recommendation 8).

If the TAFEC report (1978:46) is correct in claiming that most states had progressed a long way in implementing ideas in line with the first blueprint (i.e. the COTTE Report of 1975), and that most teacher educators consulted had expressed an

openness concerning their programs and an interest in alternative approaches, then there is some basis for believing that teacher educators may also implement ideas in line with this second blueprint (i.e.: the TAFEC Report) and so move closer to the competency-based model of professional development.

In this respect, attention may be drawn to the desirability of a delivery system which is itself competency-based. The availability of 100 individualized modules, developed at The National Center for Research in Vocational Education (NCRVE) in Columbus, Ohio, published by the American Association for Vocational Instructional Materials and distributed in Australia through Adelaide College of the Arts and Education, means that vocational teacher education programs may be provided with a well-researched and carefully developed PBTE delivery system (Hamilton and Quinn, 1978). Such provision releases teacher educators from the very costly and time-consuming developmental work required to produce competency-based materials and allows them to spend their time and energies in other fruitful ways. The materials are appropriate for the training of adult and further educators, as well as secondary teachers in such areas as agriculture, secretarial studies, industrial arts and home economics. Research has shown the suitability of these materials for use in such countries as Australia (Hobart and Harris, 1980) and England (Tuxworth, 1977) provided that they are supplemented with situation-specific materials. The

substantial volume of sales (Harrington 1981) to many different countries, with Australia being easily the second highest purchaser after the USA, lends support to this research evidence.

Two significant areas, however, which are not addressed by those 100 modules but which are becoming increasingly recognized as important in Australian adult and further education are those relating to special/exceptional students, and basic and personal skills. Competency-based learning materials (16 modules) are currently being field-tested which will cover the 380 competency statements (Hamilton et al., 1981a) identified and verified nationally in the USA as essential for vocational teachers to serve students with special/exceptional needs.* These materials are designed to enable vocational teachers to create learning environments that are accessible, accommodating and equitable in order to meet the instructional needs of individuals in groups previously denied equal educational opportunities.

A second set of materials (6 modules), currently being field-tested, is designed to cover the 85 competencies (Hamilton et al., 1981b) needed by vocational teachers in the teaching of basic and personal skills*. In both the USA and Australia, large numbers of youth and adults do not possess levels of

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*This category includes 8 groups: mentally retarded, sensory and physically impaired; gifted and talented: rural/urban economically disadvantaged; limited English proficiency; racial/ethnic minority groups; persons enrolled in programs non-traditional for their sex; adults requiring retraining (e.g. technologically displaced, aged, ex-offenders, displaced homemakers).

*The 6 modules are designed to cover the areas of basic reading, technical reading, writing, oral communication, maths, and survival skills.

communication and computational skills necessary for success in educational programs or for the pursuit of productive and satisfying roles in society. Moreover, many individuals lack the personal skills and self-discipline to be effective in education and the world of work. Such materials, therefore, would be appropriate for the training of teachers for most secondary and adult programs, and especially for those involved in transition education programs.

During the development of the special needs materials, it was found that many educators believe that programs designed to be individualized and competency-based hold the greatest promise for assuring that instruction is equally accessible, accommodating and fair to all groups of students (Hamilton 1981). Accordingly, a third series of PBTE materials (6 modules) is also being developed to cover the 84 competencies (Hamilton et al., 1981c) identified as needed by teachers to install and conduct competency-based vocational education (CBVE) programs for their students at both secondary and post-secondary levels.

All of these examples, then, are important areas in teacher education where a competency-based approach could be employed effectively and where competency-based learning materials already exist. Many of the original 100 modules are being used at Adelaide College of the Arts and Education in teacher education programs for adult and further educators, and it is intended that some of the other modules also will be field-tested at that institution during 1982-3.

Staff development for adult educators

Apart from the teacher education model of professional development where a teacher education institution has almost complete control of the program and its location, another application of the competency-based appraoch is the competency-based staff development (CBSD) model. This inservice approach employs the concepts and strategies of CBTE, but the skills development takes place within the staff members' own institution with the assistance of a qualified resource person functioning as the manager of the learning process. Staff development has often been criticized for being piecemeal rather than long-range, reflecting administrators' rather than teachers' priorities, depending excessively on outside consultants, and neglecting the needs of part-time instructors. In contrast, CBSD provides opportunities for long range development, accommodates teachers' individual needs, capitalizes on the expertise and experience of peers already in the system, and serves part-time as well as fulltime staff (Harrington et al., 1978; Miller-Beach, 1980).

There are two basic models of CBSD. The first is the institution-based approach where, for instance, a post-secondary institution has total control of the program. A fine example of this model is Holland College in Canada. The second approach is the collaboration model, where a technical college or industry works in unison with a higher education institution. Such an arrangement exists between Utah Technical College and Utah State University, Albuquerque Technical-Vocational Institute

and the University of New Mexico, and Nebraska and Washington Community Colleges with the University of Nebraska and Central Washington University respectively. North American experience reveals that not only have over 300 postsecondary educational institutions found CBSD programs to be valuable in providing instructors with the professional training they need, but also many non-education agencies such as Caterpillar Tractor Company, IBM, the Nebraska Real Estate Commission and Union Carbide Corporation (Adams et al., 1981, Norton 1981).

In Australia, there are numerous adult education bodies and agencies across the country which employ fulltime and part-time teachers who are competent in their various occupational specialities, but feel the need for further training in teaching others what they know as well as for their own professional development. Of these adult education agencies, TAFE colleges are the major examples, but others such as the Workers Educational Association and numerous voluntary groups also conduct adult education activities in the community. CBSD programs would be very relevant in such contexts, providing individualized learning experiences to meet the needs of these teachers.

Staff development for industry trainers

Another area where the competency-based approach could have considerable impact is trainer training. Much interest was displayed in this approach at the national conference of the Australian Institute for Training and Development in 1980.

Many trainers from private industries and government departments already participate as students in the competency-based instructional skills programs at Adelaide College of the Arts and Education, both on-campus as well as off-campus in places as far apart as Melbourne, Darwin, Mt. Newman in Western Australia, and Bougainville Copper Limited in Papua New Guinea. It may well be that other non-educational agencies in Australasia will wish their trainers' instructional skills to be developed via a competency-based program. As Gayeski (1981) concluded in the Training and Development Journal:

> The '70s saw the development of competency-based teacher education; the '80s may well see the extension of this concept to trainer education.

Administrator education

Apart from these various models of staff development in instructional skills, the competency-based approach may also be used in the preservice and inservice education of administrators. The recent dramatic growth in, and increasing recognition of the value of, TAFE and other adult education activities have resulted in greater numbers of relatively inexperienced administrators in positions of responsibility. These personnel may feel the need to undergo further development of their administrative competencies, an area which has not been given much attention so far in Australian education.

The NCRVE in Columbus, Ohio, has identified and verified 166 competencies (Norton et al., 1977) required by local administrators of vocational education, and is currently developing and field-testing a series of competency-based instructional packages under the guidance and financial support of a multi-state consortium. Twelve modules and a guide to their use have so far been completed, and another 24 are currently under development. As with the PBTE materials, these packages can be of considerable value in Australia in overcoming the dearth of knowledge of competencies required by local administrators and the limited availability of competency-based materials for their preparation.

Vocational education

Another arena of application of the competency-based approach besides development of instructional and administrative skills lies in the education of TAFE college students. Competency-based vocational education (CBVE) uses the same principles as PBTE and CBSD in striving for improvement in the training of skilled manpower. The current emphasis in some Australian TAFE systems on occupational analyses, specific objectives and individualized instruction suggests that there is movement in the direction of CBVE. It is worth noting that the TAFE Council's TAFE and Training for Skills (1979b), though not mentioning CBVE by name, did discuss several features of such a model--flexible learning rates; modular training systems;

duration of training programs being determined by the time needed to learn the skills required; greater coordination of practice with the TAFE educational program to reduce present inefficiency; and a clear definition of objectives as a starting point for the process of evaluating programs and applying the results.

In the USA, CBVE is a concept which has gained considerable momentum lately for a number of reasons. Such a model allows each student enough time to master each competency before moving to the next, shortens training time for some students, meets more effectively the needs of special learners, reduces failures, enables open-entry, open-exit, self-paced programs, promotes greater accountability of students, teachers and programs, and permits better articulation between training institutions. Research has indicated that well-designed approaches to competency-based learning tend to enhance learning significantly, and to promote more favorable student attitudes toward the learning process (Knaak 1977, Blank 1980, Blank 1982).

Approximately half of the American states have committed themselves to the CBVE approach. Models include Holland College (Prince Edward Island, Canada), 916 Area Vo-Tech Institute (Minnesota), Fox Valley Technical Institute (Wisconsin), Ridge Vocational-Technical Center (Florida), Central Technical Community College (Nebraska), as well as such businesses as Xerox, IBM, Holiday Inn, McDonald's and Motec Chrysler. In addition to research and legislative commitment pointing the way, it has been found (Adams et al, 1981:42) that PBTE itself has added impetus to the CBVE movement as

increasing numbers of vocational education teachers are wishing to teach the way in which they have learnt to become teachers. It is likely that, in turn, the CBVE movement, which appears to be gaining a very strong toehold in the USA, will fan the embers of the CBTE movement for the reverse reasons. Staff joining CBVE programs will want to be trained as teachers via the competency-based approach, and state mandates to implement CBVE (as in Kentucky and in Virginia where it will be fully implemented by September 1984) will lend a supporting hand to CBTE efforts.

Adult literacy and numeracy

A further application of the competency-based approach is the competency-based adult education (CBAE) model. Its definition emerged from the National Conference on Adult Competency Education in New Orleans in 1978:

> Competency-Based Adult Education is a performance-based process leading to demonstrated mastery of basic and life skills* necessary for the individual to function proficiently in society (USOE, 1978:1).

A national study of functional competency in the USA by the University of Texas in 1978 found that approximately 20 percent of adults were "functioning with difficulty" in the areas of competency tested (Ulmer 1981). It is at this group of

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*Basic skills include reading, computation, writing, problem-solving, and listening/viewing/speaking. Life skills focus on life roles such as employee, consumer, citizen, family member, healthy individual, and personal problem-solver.

disadvantaged adult learners that CBAE is directed. CBAE is characterized by four main program components--identified outcomes, assessment systems, functional literacy skills and certification of mastery--and by its program orientations--variable instructional processes and adult learner focus. While the CBAE model began only in 1974, it has become the official instructional model for adult basic education programs in 33 states in the USA (Ulmer 1981). Research to date has found that students show gains on functional competency measures as a result of participating in CBAE programs, that students report feeling "more capable and confident in handling various life situations", and that these programs have higher rates of retention than conventional programs (Kasworm, 1980:35).

With functional literacy programs gaining increasing recognition within adult education systems in Australia, the CBAE model may have an important role to play in ensuring that all citizens have the ability to function proficiently in society.

Other professional education fields

The competency-based approach also has relevance in other fields of study. CBE programs have been reported, for example, in dentistry (University of Texas, University of Florida), law (Antioch School of Law, Washington, DC), nursing (Mount Hood Community College, Oregon), management (Case Western Reserve University, Ohio), astronomy (Rice University, Texas), biotechnology (Central Western University, Washington), and in

many general studies and human services schools (Kay and Massanari, 1977; Knaak, 1977).

Conclusion

This paper has built upon Peterson and Stakenas' prediction--that competency-based education will become more extensive in American higher education--by suggesting several areas in Australian adult education and training where such a model would have considerable application. It has particular advantages in most role-training areas. In these areas, relevant knowledge, skills and attitudes (i.e. competencies) can be identified, educational programs formulated to develop those competencies, criteria delineated to gauge attainment of these competencies, and performance tested in actual role situations.

In an era when recurrent education is being increasingly espoused, CBE is relevant as a model in which individuals can enter and exit at any time. In a politico-economic climate where educational efficiency and competence are increasingly key words, CBE is appropriate as a model which can lead to shortened programs at the same time as graduating only those who have mastered an identifiable set of role-derived competencies. In an educational context where quality, equal opportunity and economy are increasingly being demanded, CBE is applicable as a model which coalesces many long-called-for features into a manageable, workable approach at least as effective, and in many cases more effective, than conventional approaches. Given

the nature of the times, Peterson and Stakenas (1981:365-6) may well be correct in claiming that any premature forsaking of competency-based educational programs is "tantamount to casting away the life boats on the Titanic in order to make more room to play conventional shuffleboard games".

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PBTE PROGRAMS AT ADELAIDE COLLEGE OF THE ARTS AND EDUCATION
IN SOUTH AUSTRALIA (1979-81)

1. Models of operation

This College has several awards designed to develop the professional competencies required for teaching/training at post-secondary level. Most students are already employed, and study these awards part-time (inservice mode). Students are occupational instructors and adult educators in different post-high school contexts:

(1) within the Adelaide metropolitan area;
(2) in South Australian regional centers, or at Darwin in the north of Australia;
(3) within the training center of Bougainville Copper Ltd. in Papua New Guinea;
(4) scattered throughout Australia and PNG.

2. Brief PBTE program descriptions

- From February 1979, PBTE was substituted into the professional studies component (as distinct from liberal studies or technical studies) of three of these awards. Students complete so many modules (core and elective) to gain so many credits. Modules were selected to address those skills already nationally accredited within the traditional award.

- The NCRVE PBTE modules (mainly in categories B, C and D) are used as the primary base of instruction. Students purchase these materials.

- The modules are supported by: Adelaide faculty counselling, weekly group seminars, written and audio-visual resources, considerable peer group interaction and practice teaching, on-site resource person (advisor) guidance, videotapes or audiotapes of their own performances, and student feedback.

- Adelaide College faculty serve as principal resource persons. Wherever possible, advisors are also identified--these are senior staff in the students' own workplaces. PBTE training workshops are conducted for these staff.

- Assessment uses performance as the primary source of evidence of competency attainment. The module TPAF's are used. Adelaide College faculty are the sole assessors, either on visits to "actual teaching situations" at the students' own workplaces or, in the case of external students, viewing videotapes of performance (C modules) or written products (other modules). Students invite faculty to visit, or post material, whenever they feel ready to demonstrate mastery.

- Each student possesses a Competency Profile Sheet (displaying the 100 modules), and a Personal Progress Record which is signed, along with the relevant TPAF, by the resource person whenever a competency has been mastered. The Department maintains a folder of Competency Profile Sheets for each student; a black colored corner of a module square indicates a required module and a cross over the whole module square signifies completion.

- Rate of progress is determined by demonstrated competency; a student continues into the next term if the number of competencies has not been completed. However, on-campus students are strongly exhorted, within their more structured program of weekly seminars, to complete the year's program within the year if at all possible.

- Completion of a course (a cluster of 4 or 6 modules) is registered on College computer forms by means of the term, "satisfactory".

3. Special areas still to be resolved or consolidated

- Identification, training, retaining and enthusing advisors. We talk in terms of "triads"--resource person, advisor and student. These groups of 3 must coordinate effectively in the development of the student's instructional competencies.

- Local resources. Accumulation of local materials to supplement the American modules is a gradual (and slow) process.

- Grading. Some students want to be rocognised for special efforts, and it may be that we will experiment with some form of grading system.

- Competency verification. The Department conducted a competency verification study (based largely on Cotrell's list) early in 1981. This research will give the program a firmer base.

- Convincing significant others. The need exists for more encouragement, persuasion, demonstration of the program's effectiveness, and research. This constitutes our major challenge at this stage, not only within Adelaide College and the South Australian further education system, but across the whole of Australia in both educational and industrial contexts.

4. Our major success

The Bougainville PBTE program has been our most noteworthy success, and is unique in Australia as: (a) a program adhering to all the principles of PBTE; (b) an approach to the staff development of industry trainers by a teacher education department; and (c) an educational or training endeavor which necessarily must occur in an off-campus mode and at a distance (i.e., an outreach program).

ROGER HARRIS
Advanced Study Center
NCRVE

Performance-Based Teacher Education in Australia: Mystery or Mastery?

Roger Harris
Advanced Study Center Fellow 1981
The National Center for Research in Vocational Education

1. State of the art in Australia

In contrast with its state of the art in the USA, PBTE in Australia is a mystery. Analyses of innovation in Australian teacher education have made little or no reference to this model. Considering the extent of professional and public debate, and political scrutiny, over teacher education and staff development, one might have anticipated more Australian educators to have taken up the gauntlet of PB approaches.

There have been, however, a few signs of interest--Howsam's address at a national conference in Sydney in 1975, two research studies funded nationally, and high PBTE module sales. One of these studies and most of the module sales have been at one institution--Adelaide College of the Arts and Education, the case study for this address.

2. Factors leading to the introduction of PBTE

Three general factors: (1) national climate of inquiry into teacher education, (2) inadequacies (4 main ones) in the traditional programs, and (3) appointment of a new Head of Department experienced with PBTE. Program pattern followed that of "course substitution".

3. Implementation concerns and strategy solutions

Rapidity in introducing the programs led to several teething problems which may have been avoided had time been available to prevent them prior to implementation rather than curing them post factum. Fourteen concerns and the ways in which each was addressed may be grouped into 5 broad categories: (1) program design, (2) training/inducting participants, (3) human resources, (4) physical resources, and (5) familiarizing significant others.

These initiatives have led to the PBTE program becoming more finely tuned. There are still aspects, however, that require constant attention: (1) identifying, training and retaining onsite resource persons, (2) accumulating local resources, (3) grading, (4) convincing significant others, (5) conducting PBTE external studies, and (6) locating the optimum degree of program structure.

4. Favorable factors in the programs' operation

(1) Thorough R&D in the production of the PBTE materials, (2) PBTE experience, conviction and enthusiasm of the program leader, (3) receptiveness of the State Department of Further Education, (4) federal funding, (5) willingness of majority of faculty to parent the model in its infancy, (6) contract funding from Bougainville Copper Limited, and (7) willingness of AAVIM to allow Adelaide College to be the Australian distributor of the PBTE materials.

5. Judgment on the PBTE programs

Formal evaluation has been favorable (Hobart and Harris 198, ERIC ED 198 311). The adoption of PBTE has enabled the Adelaide College programs to go a long way towards meeting the four major inadequacies they were experiencing in their traditional form.

6. Conclusion

The address has outlined the overall state of the PBTE art in Australia, and has focussed upon the predominant example of PBTE as a case study. It has been an example of "rolling change" implementation, a type not recommended in literature but often the model adopted by or forced upon higher education institutions.

The case study of Adelaide College is one attempt in Australia to unravel the mystery of PBTE and to attain mastery over its implementation. Perhaps others in that country may learn from this case study. Only time will tell, however, whether the current climate of PBTE in Australia represents an Indian summer or the true signs of spring.

Address presented at the National Conference on PBTE, CBSD and CBAE, Philadelphia, PA on October 13-15, 1981.

An Outreach Program of Professional Development for Industry Trainers Using the PBTE/CBSD Model

Roger Harris
Advanced Study Center Fellow
The National Center for Research in Vocational Education

1. Introduction

This case study involves a PBTE/CBSD program conducted by Adelaide College of the Arts and Education (ACAE) in South Australia for industry trainers employed by Bougainville Copper Limited (BCL) in Papua New Guinea; that is, a staff development exercise between two institutions approximately 2,500 miles apart.

2. Background and program description

Began in February 1979 with 22 expatriate trainers in BCL's training center. Most of the trainers had had no previous instructional training. Program is now in its third year. Under contract, BCL funds one extra ACAE faculty, five 2-week visits per year and some clerical assistance. Three trainers with some prior instructional training were used as on-site resource persons (RP), and in second year, two outstanding students from initial year also acted in this capacity. There are three levels of training in a stepladder approach.

3. Program analysis in terms of PBTE/CBSD principles

(1) Essential characteristics

- competencies are carefully identified, specifically stated and made public. NCRVE modules (mainly A, B, C, D categories) used as delivery system, clearly marked on individual Competency Profile Charts
- criteria for assessment are explicit and made public. TPAF's in modules used
- program is designed to develop and evaluate each trainer's achievement of the competencies
- assessment uses performance as major source of evidence. After practice with peers and on-site RP clearance, trainers "test out" with actual class--either visited by faculty RP, or send videotape to ACAE. High standards set right from the beginning
- rate of progress is determined by demonstrated competency.

(2) Desirable characteristics

- learning materials and methods, rate of progress and module sequencing are all individualized

- trainers' professional development is continually guided by feedback
- focus is on exit, not entrance, requirements
- program of competencies is modularized. Modules almost self-contained, an important factor in the case of this remote site
- total program is field-centered
- trainers have a part in designing their instructional system--some electives, choice of learning routes, sequencing
- program is inservice in character, underlining the philosophy that professional role development is a continuing process
- role integration is gradually reinforced--a more holistic concept of training is fostered after mastery of the basic competencies and a more realistic training presentation accomplished
- program is open and regenerative. Open entry-open exit. Evaluations undertaken (e.g., see Hobart and Harris, ERIC ED 198311).

4. Main limitations

(1) no formal job analysis undertaken specifically of BCL training role
(2) lack of relevant supplementary resources on the remote island
(3) tyranny of distance plagues the movement of materials, assignments and feedback between sites
(4) program depends heavily on continued funding from BCL.

5. Conclusions

This program is an example of:

(1) successful implementation of PBTE/CBSD principles and practices
(2) a worthwhile approach to staff development of industry trainers (by a department of teacher education)
(3) the applicability of the PBTE materials, developed by NCRVE and published by AAVIM, to settings which are industrial in nature and non-American in cultural orientation
(4) an educational/training endeavor which necessarily must occur in an offcampus mode and at a distance (i.e., an outreach program).

Address presented at the National Conference on PBTE, CBSD and CBAE, Philadelphia, PA on October 13-15, 1981.

APPENDIX D

DESCRIPTIONS OF CERTAIN PROGRAMS WHICH WERE EITHER VISITED BY, OR SENT MATERIALS TO, THE AUTHOR:

1. P/CBTE
2. CBSD
3. CBAE
4. CBVE

CENTRAL WASHINGTON UNIVERSITY, ELLENSBURG, WASHINGTON
OCCUPATIONAL DEVELOPMENT CENTER

PROGRAM

An alternative program for staff in Washington State community colleges to obtain their three year State Vocational Teacher Certification.

CONTENT

Competencies identified by faculty at CWU, with approval from The Vocational Directors' Council, Washington State Community Colleges System (May 1977). 12 NCRVE modules form the core (A4, A7, B2-6, C10-C12, C16, D4); teachers must then complete a minimum of 9 from an elective list of 25 modules (A8, B1, C1-3, C5-8, C13-15, C17-19, C21, C23-29, D5, E8). Successful completion of these 21 modules provides an alternative means of developing the competencies covered in the traditional courses known as Units I, II, and III.

PROGRAM FEATURES

- The elective modules most appropriate to the individual's needs are prescribed by the local RP with the approval of the teacher educator and the local vocational director if the teacher is employed.
- RP does the assessment in an actual college situation.
- Teachers are encouraged to start with a module that is likely to yield quick returns in terms of improved teaching and satisfaction.
- Teachers may work on more than one module at any one time. (e.g. writing a lesson plan, introducing a lesson and summarize a lesson could be tested out in one session.)
- Peer group interaction is encouraged.
- RPs, prior to scheduling a final assessment, are recommended to hold a short conference with the teacher to review progress and check performance on previous module learning experiences, to quiz orally to assess cognitive understanding, and to ask the teacher him/herself to express feelings about how ready he/she is.

- The vocational teacher competency profiles are used for recordkeeping.

- If the teacher is desiring university credit, arrangements must be made to this effect prior to PBTE instruction. Credits are determined according to the average time reported by the NCRVE Resource Person Guide equated to the traditional course credits.

- RPs were trained for their role in Spring 1979. A Resource Person Guide For the CWU PBVTE System has also been developed for community college RPs.

- Program is completely field-based.

FACULTY

C. Duane Patton, Director

FURTHER INFORMATION

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CORNELL UNIVERSITY, ITHACA, NEW YORK
AGRICULTURAL AND OCCUPATIONAL EDUCATION

OVERVIEW

- The New York State Board of Regents has mandated that all teacher education programs in the state be on a competency-based mode by Fall 1981.
- A pilot CBTE program was implemented in Fall 1980.
- A continuing CBTE program is in process for Fall 1981.
- See abstract .

FACULTY

Ms. Kate Penrod, Graduate Research Assistant

ADDITIONAL INFORMATION

Penrod, K., "Cornell's consortium approach to CBTE" (undated)

experience. Cooperating teachers and college supervisors also use this competency evidence checklist to assist with the professional development of each student teacher. At the end of student teaching, the college supervisor attests to the student teacher's competence in each of the ten areas. If all ten competencies are mastered, the student teacher is recommended for certification. If not all ten are mastered, staff works with the student teacher on plans to meet the remaining competencies.

Although major attention by staff is on the pedagogical area, the technical areas of competencies are also addressed. The technical task lists for each of 6 subject areas which were validated by the consortium group are distributed to the student teachers, the supervising teachers, first year teachers and college professors in the technical departments. Student teachers prepare personal education plans to develop their technical competence by utilizing college courses, summer work and inservice options. Supervising teachers also help students learn technical skills during student teaching.

The lists of ten pedagogical competencies and the six lists of technical agricultural competencies in the Cornell CBTE program have been well received in N.Y. State. Use of the lists has strengthened on-campus instruction and the student teaching field experience which are essential parts of a quality teacher education program.

Abstract

A Competency Based Teacher Education Program in
Agriculture at Cornell University

A pilot competency based teacher education (CBTE) program in agriculture was initiated at Cornell University in fall 1980. A continuing CBTE program is in process for fall 1981. This abstract highlights the key components of the program.

First, the focus is on the two basic types of competencies needed by teachers of vocational agriculture; namely pedogogical and technical. Through task analysis and a series of consortium meetings competency lists for both pedagogy and technical areas were compiled and validated. These lists are used with student teachers during both their junior and senior years. However, instruction for which agricultural education staff is directly involved deals with pedagogical competencies.

The list for pedagogy consists of ten competencies.

1. School and community relations
2. Program planning, development and evaluation
3. Instructional management
4. Instructional planning
5. Class instruction
6. Supervised student practice
7. Instructional evaluation
8. Work experience coordination
9. Advising the FFA
10. Professional role and development

Evaluation of each competency is by a list of evidences reflecting the tasks performed by agriculture teachers in executing the competency. The evidences are delineated for both provisional and permanent levels of certification.

The ten competencies are the ten main topics for classroom work during the on-campus section of the professional semester. The institutional objectives and classroom assignments for each topic directly reflect and are keyed to evidences for these topics. Each student must achieve the objectives in each of the topics areas to successfully complete the on-campus section.

The student teaching field experience is the most significant part of CBTE in agriculture at Cornell. During this experience the student teachers use their competency and evidence checklist to assist in planning and managing their time so all competencies are achieved during the student teaching

FERRIS STATE COLLEGE, BIG RAPIDS, MICHIGAN
SCHOOL OF EDUCATION AND LEARNING RESOURCES

USE OF PBTE

Respect for the professional autonomy of teacher educators has led to the implementation of PBTE in certain courses (eg: "Methods of Teaching Occupational Subjects" and "Directed Teaching") rather than across the board.

CONTENT

- The methods course for undergraduate trade-technical and allied health teacher trainees covers 13 NCRVE modules (B3, B4, C2, C3, C10-C17, C20).

PROGRAM FEATURES

- Considerable use is made of peer group teaching in small groups, using the videotaping facilities.
- Each student is issued with a blank videotape and log sheet. These resources, together with self and colleague assessments of each competency, are handed in to the instructor prior to the end of the 10-week term.
- Class meets as a group 4 hours per week to discuss topics not covered by modules as well as the competencies covered in the modules, view pertinent A-V materials, observe and critique student lesson demonstrations (two per student), and complete five written tests.
- Through the class it is stressed that competencies demonstrated in the methods class will have to be demonstrated during "Directed Teaching" in actual situations prior to graduation.
- Final assessment is made either by the supervising teacher or the college instructor. Student teachers are asked to complete self-evaluations on each competency, and to request evaluation only when they are satisfied with their performances.

- The program is a combination of individualized and group instruction, which has been in operation for 7 years. Quarterly evaluations by students indicate that it is operating satisfactorily.

FACULTY

Dr. George Storm, Professor of Education

INDIANA UNIVERSITY OF PENNSYLVANIA, INDIANA, PENNSYLVANIA
CENTER FOR VOCATIONAL PERSONNEL PREPARATION

PROGRAM

Similar to Temple University's, for provisional (Level I) and permanent (Level II) certification of teachers in trade and industrial, and health-related occupations. Began in spring 1979. Also offered are a 3-12 credit block of electives for the B.S. degree in vocational education; an up to 24 credit inservice program for permanent certification of home economics teachers; and 15 credits for cooperative education teacher-coordinator certification, i.e. serves both pre-and inservice vocational teachers.

CONTENT

All 100 NCRVE modules, plus some state and locally developed materials, are used, each award ' ving different configurations of modules. Both Level I .d Level II comprise 30 modules each:

Level 1: B1-6, C2, C4, C6-13, C15-17, C21-23, C29, D1, D5, E5, E8, E9,, G7, I3(=83 performance elements).

Level 2: A4-6, A8, C1, C3, C18-20, C24-28, D2-4, D6, E1-4, H2, H4, J1, J5 (=120 performance elements), and M1-4 (on special needs).

PROGRAM FEATURES

- Operates like the Temple University program, incorporating the following characteristics: field-based, performance-based, "directed-individualized instruction", self-pacing, self-evaluation, differentiated staffing, helpful supervision, assessment in the actual situation and criterion-referenced evaluation.
- Each student progresses at a rate consistent with personal ability and motivation. Progress based on ability to perform.
- Approximately 20% of the instruction is through group instructional methodology, 80% individualized study.
- Terminal performance first judged by the learner through self-evaluation, then confirmed by a staff member.

PROGRAM FEATURES (con't)

- Field Resources Persons (FRPs) weekly responsibility requires about 80% of his/her time in the field serving 15-20 interns in as many as 4 local schools.

- A computerized management information system (MIS) stores personal and demographic characteristics of each program's personnel, progress of interns on modules, and conferences and observation sessions. Reports issued at specific intervals--assist program management and expands program research base.

ASSESSMENT

- When a FRP, a Senior Teacher Educator (STE) and intern agree on evidence of program completion, a Council of Educators (COE) is convened. It decides on provisional certification.

- Requirements for the program are:

  - complete 30 modules in an actual situation
  - attend small group meetings
  *- complete a criterion-referenced test of knowledge over the 30 modules ("to determine whether the intern has developed the cognitive base for performance of a teaching skill")
  - participate in an overall evaluation by a COE of all products associated with completed modules plus a ½ hour sample videotape of teaching ability (the tape demonstrates a combination of several competencies).

FACULTY

Dr. Thomas J. Walker, PBTE Program Coordinator.

1981: 4 STEs, 6 FRPs, 35 School RPs for 90 interns in 30 different locations.

FURTHER INFORMATION

Walker, T.J., "IUP Vocational personnel program. Technical Plan for preparing school resource persons", 1978.

_____, "IUP Vocational personnel program. Differentiated staff development: preparing resource personnel. A training model". July 1978.

_____, "Manual for the IUP management information system"

FURTHER INFORMATION

_____, "Preparing school resource personnel to function as part of a differentiated staffing team in a PBTE program", 1979.

_____, The adoption of a programmatic innovation in competency-based learning packages and systems in vocational teacher education: an assessment, Indiana, PA, November 1980.

_____, Annual Report of the development and implementation of a comprehensive voc. ed professional personnel program at IUP, July 1, 1979 to June 30, 1980.

_____, "Factors affecting the transportation and installation of a new PBTE program", paper presented at Annual Convention of AVA, New Orleans, LA, December 1980.

_____, "PBTE and CBAE at IUP", paper presented at National Conference on Competency-Based Professional Development, Philadelphia, PA, October 1981.

Adams et al. (1981:53).

MICHIGAN STATE UNIVERSITY, EAST LANSING, MICHIGAN
DEPARTMENT OF SECONDARY EDUCATION AND CURRICULUM

1. PBTE modules are used in both graduate and undergraduate courses on campus as resource materials to accomplish more effectively the course objectives. They are not used as the delivery system.

2. The most successful utilization of the PBTE modules has been with non-degree vocational teachers in field settings (e.g. at Lapeer Vo-Tech. Center where modules were used extensively in all 10 courses as primary instructional resources).

3. Slide-tape sequences are used to orient students to the use of PBTE modules.

4. A field supervisory system is both necessary to the program and "the most difficult to implement".

5. Faculty:

   George W. Ferns, Professor

PBTE Materials Utilization in
the Department of Industrial Education
Murray State University
Murray, KY

Chairman: Dr. Paul Lyons

The Department of Industrial Education at Murray State University is comprised of the functional areas of Industrial Arts Teacher Education, Vocational-Technical Teacher Education and Industrial Education/Training Services.

The PBTE concepts and materials are currently being used as supplementary materials in the Vocational-Technical Teacher Education Bachelor of Science Degree program.

The supplementary materials include: A-4, A-5, B-1, B-2, B-3, B-4, B-5, C-10, C-11, C-12, C-13, C-14, C-16, C-17, C-24, C-25, C-26, C-29, D-1, D-2, D-3, D-4, D-5, F-1, F-2, F-3, F-4, F-5, H-1, H-2, H-3, H-4, H-5, and H-6.

The materials are used in a field based setting under the direction of full time departmental faculty members. However, one faculty member, serving as a resource person, is assigned full-time to follow-up on all new vocational teachers and to assist, upon request, any vocational teacher needing additional help in developing his/her instructional techniques.

Since the PBTE Materials are used to supplement the existing course content, the management problem associated with a full blown competency based program was not encountered.

The program at Murray State University is not self-paced. The only flexibility with reference to students working at different rates is within a specific course.

Requirements for grading purposes are based on the successful performance of identified competencies, plus scores on written examinations. The grading system of "A" "B" "C" is used to record student accomplishment.

The implementation of the PBTE materials presented a problem of expense to the students. Since the PBTE materials are used as supplementary materials, there was the cost of the regular textbook plus the additional cost of the PBTE modules. In cases where the student did not want to keep the module, a provision was made where the module was rented to the student and returned to the instructor at the end of the course. This procedure has worked very well in most cases.

1. NORTH CAROLINA STATE UNIVERSITY, Raleigh, North Carolina
DEPARTMENT OF OCCUPATIONAL EDUCATION

2. UNIVERSITY OF GEORGIA, Athens, Georgia
DIVISION OF VOCATIONAL EDUCATION

3. FLORIDA STATE UNIVERSITY
COMPREHENSIVE VOCATIONAL EDUCATION PROGRAM

4. MISSISSIPPI STATE UNIVERSITY
INDUSTRIAL AND OCCUPATIONAL EDUCATION DEPARTMENT

USES OF PBTE:

In these programs, the PBTE materials have been used in the following ways:

(1) as resource materials in some classes in lieu of a regular textbook.

(2) for Individual Study or Independent Study options or with "Special Problems" students where there are too few students to form a viable class.

(3) as supplementary references in certain courses, but not as the primary instructional system.

(4) as resources for providing group and individual in-service sessions (e.g. the Comprehensive Vocational Teacher Education Program for the Mississippi ARC Region).

FACULTY

NCSU:
Dr. J.R. Clary, Head

UG:
Dr. John Scott, Chairman, T&I Section

FSU:
Dr. H. Hineley, Professor

MSU:
Harry D. Holloway, Assistant Professor

FURTHER INFORMATION

MSU: Adams et al. (1981:52)

PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PENNSYLVANIA
DEPARTMENT OF AGRICULTURAL AND EXTENSION EDUCATION

PROGRAM

CBTE program for agriculture teachers in public school systems throughout Pennsylvania (1981:78%(160) are preservice students, 22%(47) are inservice teachers).

CONTENT

Competencies have been identified and verified through research (one M.Ed. Thesis 1977, another D.Ed. Thesis 1979). NCRVE modules, as well as some additional modules unique to ag. ed. and PA's needs, are grouped into 10 categories (comprising 78 competencies) describing the vocational agriculture teacher's role.

PROGRAM DESCRIPTION

- 2 phases:

  (1) at simulated application level within the university
  (2) at demonstrated competence level in actual school situations while student teaching.

- Teacher educators are the resource persons, assisted by graduate students and inservice teachers. Cooperating teachers serve as local resource persons during student teaching, and are "inserviced" annually at a 2-day summer workshop.

- Individualized instruction and counselling, class sessions devoted to each competency, and small group simulated classroom situations (videotape is used).

- Progress dependent on demonstration of competency in an actual school setting.

ASSESSMENT

- Performance assessment occurs both in the university setting and in actual school settings. University RP assesses in the first setting, university RP and local RP assess in the second.

- Module TPAF's and some additional assessment instruments prepared at Penn State are used. Recycling occurs until acceptable level is reached.

- Provision is made for students to "challenge" competencies in the program through documentation or demonstration of competencies prior to group discussion sessions (e.g. some have previously acquired skills on audio-visual equipment).

- Assessment is first made by the learner through self-evaluation and then confirmed by a RP.

SITES

- The ag. ed. program serves the ag teacher education needs of the whole Commonwealth of Pennsylvania.

- Instruction is delivered on the Penn State University (University Park) campus, selected Commonwealth Campuses (there are 17), 15 outreach inservice centers, and 50 cooperating public school vocational ag. programs.

FACULTY

James H. Mortensen, Associate Professor

FURTHER INFORMATION

Mortensen, J.H., "PBTE program, Department of Ag. and Ext. Ed., The Penn State University", paper presented at the National Conference on Competency-Based Professional Development, Philadelphia, PA, October 1981.

PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PENNSYLVANIA
DIVISION OF OCCUPATIONAL and VOCATIONAL STUDIES

PROGRAM

CBTE Program for Inservice Industrial Education teachers throughout Central Region of PA (29 Institutions).

LEVEL

12 credits of vocational industrial education required for Vocational Instructional I certification in PA.

CONTENT

22 NCRVE modules (6Bs, C5, C9, C10, C11, C12, C15, C16, C17, C23, C29, D6, E5, E6, E7, E8, E9) comprise the following 4 courses (on average, 4 modules=1 credit):

- Orientation to Voc. Ind. Ed. Teaching (2 cr.)
- Methods in Vocational Education (2 cr.)
- Special Methods in Related Subjects (2 cr.)
- Observation and Practice Teaching (6 cr.)

PROGRAM DESCRIPTION

- Differentiated staffing: 4 tiered:

  1) 7 fulltime faculty

     - assigned responsibility for specific schools in an area.
     - responsibility for monitoring the professional growth and development of personnel practising in these schools.

  2) University coordinator of CBTE

     - interpret the profl. personnel needs of local schools as reported by the faculty.
     - plan the CBTE instructional program.
     - provide the necessary instructional materials for the delivery of the program.
     - train the FRP and LRP
     - control the administrative aspects of the total CBTE delivery system.

PROGRAM DESCRIPTION (con't)

3) FRP

- fulltime employees of PSU:
  - Subject specialist
  - Permanent certification
  - Minimum of 4 years of teaching
  - Enrolled in a university program
- responsible for monitoring students' progress
- distribute essential instructional materials
- register students for participation in the program
- establish a regular schedule of visits for assessment.

4) LRP

- fulltime teacher in a local LEA:
  - demo. of teaching proficiency
  - subject competency
  - voc. I certification as a minimum
  - successful completion of CBTE*
  - rec. by administration.
- act as contact persons and counsellors to beginning teachers as they complete the program
- clarify what CBTE is
- answer questions about CBTE process and materials
- provide immediate feedback concerning individual teacher effort
- assist the learner in determining whether he/she was prepared for final learning experiences.

- o FRP visited each student once per 2 weeks to discuss progress, observe final learning experiences.
- o Between visits of FRP, student could consult with the LRP.
- o Program adheres to 5 essential principles of CBTE.
- o Progress monitored by Personal Student Progress Record
- o Program outlined on a Vocational Teacher Competency Profile designed to show only modules in this program.

PERSONNEL

Wayne L. Detwiler, Sr., Assistant Professor

FURTHER INFORMATION

- ERIC ED 174 753 and 183 735
- Detwiler, W.L., "A Penn. State University CBTE program for industrial education teachers-phase 3". Report, June 1981.
- Adams et al. (1981:53).

SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE
DEPARTMENT OF VOCATIONAL EDUCATION STUDIES

USE OF PBTE

PBTE activities are the responsibility of individual faculty. Some use PBTE materials exclusively for course substance and process, but generally they are used as supplementary components within conventional 2-4 semester hour courses.

MATERIALS

- undergraduate teacher education - mostly NCRVE modules.
- graduate teacher education - NCRVE modules, plus other materials such as those from AIR and VECS.

PROGRAM DESCRIPTION

- Regular university faculty serve as RPs. Almost all have either participated in the development of PB materials or attended relevant workshops, and are therefore trained.
- Faculty administers the program as a part of the courses they are assigned to teach .
- Usual record-keeping devices are used, and grades are assigned and reported.
- The fundamental right and responsibility to structure what and how materials will be used remain with the instructor of the course. A few faculty remain oblivious to available materials, others choose not to use PB materials.

FACULTY

Dr. Wayne S. Ramp, Professor, Vocational Education Studies
Dr. James C. Parker, Professor, Educational Leadership

TEMPLE UNIVERSITY, PHILADELPHIA, PENNSYLVANIA
DEPARTMENT OF VOCATIONAL EDUCATION

PROGRAM

VITAL (Vocational Intern Teaching which is Applied Learning)
MASTERY

LEVEL

Inservice vocational Teachers (without previous teacher education) who have entered teaching directly from business, industry or health occupations:

Voc. I certificate (began 1973) - VITAL: leads to provisional certification

Voc. II certificate (began 1977) - MASTERY: leads to permanent certification

Modules are also used in the preservice business education program (36 modules).

CONTENT

- VITAL comprises 83 teaching competencies, covered in 30 NCRVE modules (B1-6; C2, 4, 6-13, 15-17, 21-23, 29; D1, D5; E5, E8-9; G7; I3)
- MASTERY utilizes another 18 NCRVE modules

PROGRAM DESCRIPTION

- Interns do not attend any university classes. Competencies are studied and practised by interns in their own school settings.
- They receive assistance from three levels:
  - senior teacher educator - directs programs in particular geographical area.
  - "field" RP - employed (untenured) by the university to visit interns.
  - "resident"RP - volunteer master teacher, unpaid.
- Modules may be used in any sequence. Interns set their own pace.
- Seminars, and content seminars, are mandated from 1981 (to that time, they were recommended though not required)

PROGRAM DESCRIPTION (con't)

- Self-evaluation is encouraged by widespread use of videotaping. Interns videotape their final learning experience, and review the tape with their FRP.

- Interns sign a contract by which they agree to complete the program and pay the costs for 15 semester hours. Course typically takes 1½ years (in 1973-4, 38 out of 114 completed in one year). Usual time in conventional program was 2 years. In Pennsylvania, a teacher has 3 years to earn provisional certification (Voc. I).

MANAGEMENT

- VITAL-MIS is a computerized management information system. Became operational in fall of 1975. Stored in it are up-to-date descriptions of personal and demographic characteristics of all interns and staff members, and a complete history of staff and intern activity since becoming active in the program.

- Information provided to staff through reports at regular intervals. These reports guide staff in serving the interns.

ASSESSMENT

- Once the FRP has guided an intern through the program, the intern's completed modules, lesson plans and a specially-prepared, 30 min. videotape are reviewed by the local Council of Educators.

- Council consists of a senior teacher educator, an appointed local administrator and an elected local teacher. There is one Council in every school.

- Council makes the decision whether <u>overall</u> competency has been attained and whether provisional certification will be recommended to the PA Department of Education.

FACULTY

Dr. R.A. Adamsky, PBTE Program Director

In 1979-80,
5 faculty (2 FTE)
12 paid staff (12 FTE)
70 volunteer RRP
for 190 interns.

FURTHER INFORMATION

- Tuxworth (1977:108-115), Norton et al. (1978:50-1), Adams et al. (1981:7-11, 14, 19-24).

- Adamsky, R.A. and Cotrell, C.C. "Program VITAL: a futuristic inservice model for voc ational teacher education.", JITE, 12, Sumer 1975; and other more recent articles in the same journal.

- Wichowski, C.P. and Adamsky, R.A., "CB learning packages & systems in vocational teacher education: an assessment". An evaluation of VITAL's 3rd year, 1975-75. Temple University, June 1976.

- Bronk, C.G. and Adamsky, R.A., same title. An evaluation of VITAL's 4th year, 1976-77. Temple University, June 1977.

- ERIC ED 192 053→192 065, 192 068, 192 154→192 159.

UNIVERSITY OF ALASKA - JUNEAU, ALASKA
DEPARTMENT OF VOCATIONAL EDUCATION

PROGRAM

Master of Science in Vocational Education (Teaching Emphasis) for vocational teachers at secondary and post-secondary levels. Began 1981.

CONTENT

A required part of the degree is undertaken via selected PBTE modules from the NCRVE. However, the entire 100 modules are available as electives and to meet the needs of non-degree students.

PROGRAM FEATURES

- 12 master teachers used as RPs supervised by the university.
- Number of students per RP is limited to 10.
- Grading is A, B or Incomplete.
- The program, because of the vase size of the State, requires extensive, long distance travel by university personnel. The RPs and students are visited at least once per semester in remote locations, more frequently elsewhere.
- The program resulted from a 1979-80 study by The Northern Institute for Research, Training and Development in Anchorage which recommended the use of PBTE for vocational teacher education as a way of overcoming difficulties of great distances and a scattered target population.

FACULTY

Dr. Armand Seguin, Associate Professor of Vocational Education

FURTHER INFORMATION

The Northern Institute for Research, Training and Development, PBTE: A System for Staff Development of Alaskan Vocational Teachers, report prepared for the Alaska Department of Education, Anchorage, Alaska, May 1980.

UNIVERSITY OF CENTRAL ARKANSAS, CONWAY, ARKANSAS
CENTER FOR VOCATIONAL EDUCATION

PROGRAM

- Inservice PBTE program for vocational-technical teachers.
- Proposed start in January 1982 after an assessment of competency needs from October 1981.
- NCRVE modules will be used to eliminate individual deficiencies.
- Resource persons in each Area Vo-Tech School will be trained.
- Field-based.
- Evaluation of effectiveness will be conducted and completed by June 1983.

FACULTY

Dr. Kenneth Jordan

UNIVERSITY OF CENTRAL FLORIDA, ORLANDO, FLORIDA
DEPARTMENT OF SECONDARY AND VOCATIONAL EDUCATION

BACKGROUND

1. Began September 1978 with 79 inservice teachers at 3 service centers.

2. Reasons for adoption of PBTE:

   (a) State interest in PBTE--university received a state grant of $60,000 each year for 3½ years to run the program.
   (b) Needs of some county school districts--cries for relevance, distance to travel to classes.

3. University hired a program director specifically to implement PBTE.

PROGRAMS

The PBTE model is primarily used in 2 programs in the health occupations and T&I service areas:

(a) for those entering teaching directly from B&I and service occupations without previous teacher training and who are working towards a Florida Regular Certificate; and
(b) for inservice or preservice teachers seeking an undergraduate degree.

PBTE modules are also being used more informally in the preservice business education program.

PROGRAM CONTENT

- Certification program: 7 "clusters" totalling 45 competencies--34 required, 11 elective (36 credits).
- BA program: 8 "clusters" which include 59 competencies--48 required and 11 elective (50 credits).
- The NCRVE modules are used, together with some locally developed modules.

PROGRAM FEATURES

- Interns work at their own pace. Completely field-based.
- Students must start with the cluster, "Essential teaching skills in vocational education" (B2, B4, B5, D4, B3, C16, C17), then the other 6 clusters may be taken in any sequence.
- Weekly seminars (of 1 hour) are an essential part of the program. They are held in the 3 service centers. Very few classes are held on campus.
- All the competencies must be achieved at the simulation and/or planning level in the university seminar setting. 23 competencies for the certificate and 33 competencies in the BA degree must also be demonstrated in an actual teaching situation.
- Resource centers exist at each of the service centers.
- Staff includes 1 project director, 3 tenured fulltime teacher educators, and 12 field contact persons (unpaid, local school administrators).
- 90% of the students are inservice teachers, 10% preservice. Enrollment 1979-80=109, 1980-81=150.
- Grading:

  (a) In seminars: a numerical rating is given for each competency satisfactorily completed. A letter grade is awarded for the cluster when all competencies have been completed. These grades include a factor, equal in weight to one module, representing the faculty member's judgment of the student's professionalism (see attachment).
  (b) In Directed Field Experience : a rating of S (Satisfactory) is awarded for each competency demonstrated in an actual teaching situation and meeting the module criteria.

- Assessment in the seminar setting is undertaken by university faculty, while performances in actual teaching situations are assessed by school personnel (e.g. dean of instruction, area supervisor, instructional specialist) serving as FRPs trained and supervised by the university.

FACULTY

Dr. Glen E. Fardig, Director, PBTE Project.

FURTHER INFORMATION

Fardig, G.E., Prospects of PBVTE, Orlando: UCF, 1980.

Adams et al., 1981, pp. 7-15 and 25-31.

UCF, Performance-Based Vocational Teacher Education Program, January 1980.

PERFORMANCE-BASED VOCATIONAL TEACHER EDUCATION PROGRAM
GRADING PROCEDURES

The PBTE Program is comprised of Competency Clusters, with quarter hours of college credit awarded for successful completion of each Cluster. To award appropriate credit and a grade for each Cluster, a rating scale with a description of each value has been developed. Each product or performance within a Cluster is to be assigned quality points as per the Product Rating Scale Description. An additional factor, equal in weight to one module, will be the faculty member's judgment of the teacher's professionalism, as described in the Professional Rating Scale.

To compute a final grade, points assigned for each product or performance completed will be totaled. Points for the Professional Rating will be added, and the result divided by the number of competencies in the Cluster, plus one. The computed value for the Competency Cluster will be assigned a final letter grade according to the following grading scale:

3.6	through	4.0	=	A
2.7	through	3.5	=	B
2.0	through	2.6	=	C

Points	PRODUCT RATING SCALE DESCRIPTION
4	The product or performance is at a level of proficiency such that it could serve as an example or model of competence for other teachers. Meets all checklist criteria at the EXCELLENT level.
3	The product or performance is at a level of proficiency expected of a competent beginning teacher. It is fully satisfactory, meets all criteria on the checklist, but includes some deficiencies.
2	The product or performance is at a minimally acceptable level for a beginning teacher. It includes some significant deficiencies of conceptualization or presentation. Meets criteria on the checklist at a minimal level.

Points	PROFESSIONAL RATING SCALE DESCRIPTION
4	The attitudes and behaviors of the teacher are fully professional. The teacher participates constructively in every seminar session, maintains a regular schedule of completed tasks, completes written products with an appearance of high quality, and gives evidence of an enthusiastic and positive attitude toward teaching and learning.
3	The attitudes and behaviors of the teacher are those generally expected of a teacher in the profession. The teacher participates in most seminar sessions; he/she usually completes tasks on schedule; written products are of satisfactory appearance; there is evidence of a generally positive attitude toward teaching and learning.
2	The teacher shows evidence of being minimally professional in attitude and behavior. The teacher participates infrequently; some contributions tend to be counter-productive; the teacher allows work to accumulate before completing it; products have deficiencies in presentation and appearance; there is some evidence of lack of a positive attitude toward teaching and learning.
0	There are serious questions about the teacher's professional attitudes and behaviors. The teacher should rethink his/her professional responsibilities and career goals.

Department of Secondary and Vocational Education
UNIVERSITY OF CENTRAL FLORIDA

1/79

UNIVERSITY OF MINNESOTA
AGRICULTURAL EDUCATION

COURSE TITLE

Teaching Methods in Agricultural Education (5 credits)

COURSE LEVEL

Pre- and Inservice program for secondary agricultural education teachers

PROGRAM CONTENT

The 10-week course is centered on 29 performance-based modules covering 71 student performance objectives. (The competencies and modules were identified by teacher educators as functions that a teacher must perform, verified by experienced teachers, and refined over a period of years.) Students are expected to spend an average of four hours per module. The modules called "Minn Mod's", consist of the following sections:

- rationale
- objectives
- preassessment (essay and objective questions)
- learning activities (readings, audiotapes, demonstrations by the resource person to small groups, etc.)
- evaluation (based on the completion of learning activities. May involve written tasks and/or actual performances. Evaluated consists of a checklist for each learning activity. Each learning activity is evaluated on the basis of quality of performance (satisfactory or unsatisfactory). A microteaching performance is required in 10 of the 29 modules.)
- a list of "Do's and Don't's" for that particular competency.

PROGRAM DESCRIPTION

- Large group discussions are held daily for the first week, after which these one-hour discussions are held 3 days per week. All students are expected to attend these sessions. They are designed to assist students in clarifying various aspects of the modules, or discussing issues related to teaching methods that may not be addressed in the modules.

PROGRAM DESCRIPTION (con't)

- Each module includes an audiotaped discussion which forms the basis for completing the learning activities.
- Students do not need to complete any of the learning experiences in a module if the pre-assessment is completed satisfactorily.
- Self-paced learning. Each module is handed in as it is completed.
- Students prepare lesson plans, utilize media and motivational activities, and prepare test questions for each microteaching session that requires lesson planning.
- Student progress is kept on a "Student Progress Record" chart detailing the competency, module number, product/performance required, date completed, points, and the evaluator.
- There is a videotaped model for each final learning experience requiring a teaching situation.

COURSE ASSESSMENT

- Comprises:

  a) satisfactory completion of 27 modules
  b) 2 elective modules (Numbers 27 and 28)
  c) preparation of a course outline identifying course, unit, problem area, problems and learning activities (small group activity)
  d) preparation of a bulletin board relating to the above project (small group activity)
  e) completion of a final written examination on the cognitive aspects of teaching methods (large group activity).

- Students accumulate points. Each module earns between 2 and 4 points, with modules 18-22 being worth four times the other modules. The examination is worth ten times the value of the rating.
- Final grading is by letters:

Grade	Range of Total Course Points per Grade
A	295-328
B	262-294
C	230-261
D	197-229
N	196 or less

COURSE ASSESSMENT (con't)

- A satisfactory grade in the course means a minimum of 230 points (C grade).
- Students must complete this course satisfactorily before undertaking the student teaching component.

FACULTY

Roland L. Peterson, Associate Professor

FURTHER INFORMATION

- Tuxworth (1977:75-79), Norton et al. (1978:52) and Adams et al. (1981:52).

THE UNIVERSITY OF NEBRASKA - LINCOLN, NEBRASKA
CENTER FOR VOCATIONAL TEACHER EDUCATION

PROGRAM

A competency-based option (implemented 1976) for obtaining "vocational approval" for two-year post-secondary vocational teachers to be involved in reimbursed programs. (The other option is completion of a minimum of 9 semester hours of coursework in vocational education.)

CONTENT

A competency list was compiled from various sources, and used as a survey instrument. Verified using a sample of all post-secondary vocational teachers, administrators, teacher educators and state staff in Nebraska. The list was divided into two sections: Section I (Basic Competencies) included competencies thought to be most critical to a beginning teacher in a post-secondary program (28 NCRVE modules mainly in B & C categories); Section II (Supplemental Competencies) included competencies not so critical (67 NCRVE modules). Teachers selecting this option are required to complete 50% of Section I and 35% of Section II (the remaining 50% from Section I can be used in place of competencies in Section II). Five modules equate to one semester credit.

PROGRAM FEATURES

- Teacher educators maintain all instructional, assessment and "sign-off" responsibilities.
- Representatives from all the technical community colleges were trained as on-site resource persons to use NCRVE materials.
- The Nebraska plan is not designed as a complete teacher education process. It is viewed as minimal but adequate for "vocational approval". Other professional development is viewed as necessary.

FACULTY

Dr. Niel Edmunds, Associate Professor in Vocational Education

FURTHER INFORMATION

Fardig, G.E. et al., Guide to the Implementation of PBTE, Athens, GA: AAVIM, 1977, pp. 33-35.

Norton, R.E. et al., PBTE: The State of the Art, Athens, GA: AAVIM, 1978, pp. 57-58.

Nebraska Advisory Council for Vocational Education, Professional Preparation for Two-Year Postsecondary Vocational Education Teachers, Edition Two, Lincoln: NACVE, 1978.

UNIVERSITY OF NEW HAMPSHIRE, DURHAM, NEW HAMPSHIRE
OCCUPATIONAL EDUCATION DEPARTMENT

OVERVIEW

- In 1974, the New Hampshire Council for Teacher Education published an advisory report recommending, inter alia, that "teacher education institutions should consider incorporating positive aspects of PBTE into their programs." At the same time, the Council rejected statewide adoption of PBTE and advised a period of exploration and experimentation.

- UNH participated in the field-testing of the NCRVE modules, and has been responding to the Council's recommendation in implementing PBTE in a pragmatic, gradualist manner.

USE OF PBTE

PBTE is applied at the course level rather than to the program as a whole--"Microteaching", "Advanced Methods", "Cooperative Education", "Community Organizations" are examples of such courses which use NCRVE materials.

PROGRAM FEATURES

- Recycling, self-sequencing, self-paced, individualized.

- In microteaching, a competency is demonstrated first on a practice basis, then to a group of six high school students hired to act as a class and as student evaluators. Lessons are videotaped. The students use TPAFs, as does the RP who makes the final assessment.

- Not field-based, except insofar as students undertaking internship in their senior year are advised to use the modules as resources and will be partly assessed on the competencies covered in each of the PBTE courses (including "Microteaching").

- Students have available a well-stocked resource center.

CONTENT AND GRADING OF "MICROTEACHING" COURSE

- Contractual grading system used, with grades A, B, and C basically determined by number of competencies completed (see handout for 1980/1).

FACULTY

William H. Annis, Professor and Chairman

FURTHER INFORMATION

Tuxworth, E.N., "The implementation of PBVTE in selected institutions in North America and in England", Master's Thesis in Occupational Education, UNH, December 1977.

FALL SEMESTER
1980/81
CcEd 650

Microteaching

1. Objective: Students using the PBTE modules will demonstrate abilities in the planning, execution, and evaluation of the instructional process.

2. About the Course: The PBTE modules will be used in this class for you to demonstrate the competencies gained in the presentation of materials.

   Tuesdays' labs are utilized in learning how to run equipment, planning, practicing and evaluating lessons.

   Thursdays' labs will include the "take" (VTR) of your performance in executing the C modules.

   Recitation periods will be used for demonstrations and presentations by the instructor.

3. Grading: There is no paper and pencil final examination; you will choose the grade you wish for the course in consultation with the instructor by the third(3rd) class session. Basically, it will be the number of modules completed and how well you complete them.

   Minimum Requirements: "C"

   Modules:
   - B2 Performance Objectives
   - B3 Unit Plans
   - B4 Lesson Plans
   - B6 Prepare Teacher-made Instructional Materials
   - C2 (Part A) Conduct Group Discussions
   - C10 Introduce a Lesson
   - C11 Summarize a Lesson
   - C12 Employ Oral Questioning Techniques
   - C16 Demonstrate a Manipulative Skill
   - C17 Demonstrate a Concept or Principle
   - D2 Assess Cognitive
   - D4 Assess Psychomotor

   and be able to utilize in the instructional process the 35mm projector, OHP, and VTR.

- Requirements for a "B" all the above plus - C13 Reinforcement
  D1 Establish Student Criteria
  plus three (3) additional 'C' modules chosen in consultation with instructor, slide/tape machine, opaque projector.

- Requirements for an "A" all the above plus - B5 Select Student Instructional Materials
  D3 Assess Affective Performance
  plus three (3) additional modules chosen in consultation with instructor, utilize camera pod to take slides for slide/tape presentation.

UNIVERSITY OF PITTSBURGH, PITTSBURGH, PENNSYLVANIA
SCHOOL OF EDUCATION, VOCATIONAL EDUCATION

PROGRAM

- Serves inservice vocational education teachers (interns) in trade and industrial, home economics-related, and health-related occupations. The program structure can also serve preservice interns at any time.
- This program is an adaptation of that at Temple University.

CONTENT

Selected PBTE modules from the NCRVE are used.

PROGRAM FEATURES

- totally field-based
- three-level RP support team:

  (1) Resident RPs (RRPs)-recommended by their administrators, trained for the role using Temple University modules designed for this purpose. Preferably have permanent certification. They receive $75, plus tuition for 3 credits, after they have assisted interns through a total of 18 modules.

  (2) Field (RPs (FRPs)-usually graduate students, serving the program while taking graduate study. Must have successful teaching experience. They work with interns weekly.

  (3) Senior Teacher Educators (STEs)-regular, permanent faculty. University working towards assigning all interns in a particular school to a specific STE (to avoid wasting resources).

- Program coordinated by 1 faculty member, devoting 3/4 time to it.
- PBTE activities recorded daily by FRPs, then coded and stored on the computer.

PROGRAM FEATURES (con't)

- Self-paced program, with some modification necessary for university credit-granting and tuition-gathering processes.
- A traditional program exists alongside the PBTE. Possible for interns to leave PBTE for the traditional--one did in 1980 (reason: "too much freedom, not enough structure" in PBTE).
- RP training workshop: two groups, one in which RRPs are learning their helping skills, the other where interns are developing their instructional skills. Each group practises its skills independently, then they are brought together. Activities are videotaped. The RRPs are then able to separate again to discuss their practice in using helping skills on actual beginning teachers.

GRADING

An "A" grade is issued for successful completion of PBTE credits.

FACULTY

Dr. Ruth M. Lungstrum, PBTE Coordinator.

1981: 2 FRPs for 48 interns.

THE UNIVERSITY OF VERMONT, BURLINGTON, VERMONT
DEPARTMENT OF VOCATIONAL EDUCATION AND TECHNOLOGY
(College of Agriculture) AND HOME ECONOMICS EDUCATION PROGRAM
(School of Home Economics)

I. Vocational Education and Technology

1. The course for first year teachers, entering the profession without a background of preparation or experience in teaching, is performance-based. These teachers are appointed to area vocational schools.

2. Four group meetings in the year, the first on campus, the others at sites throughout the state.

3. Each student is visited by a faculty member at least 4 times/year.

4. Local RPs are sometimes employed to assist university faculty. Where a local RP is used, faculty usually visit 2 times/year, and the local RP 4 times/year.

5. PBTE is introduced in the first meeting. The model and modules help new teachers identify the functions and tasks of a vocational teacher, focus the teachers on specific competencies, and provide a common frame of reference for discussion at meetings and visitations.

6. 6 competencies form the core: B4, C10, C11, C12, C16, C17. The teacher and RP select at least 2 additional competencies to be attained during the year.

7. "The combination of independent study, individual on-site supervision, and periodic small group instruction has proven to be an effective delivery strategy".

8. Staff:

   1979-80: 3 university faculty (each 25% FTE), and
   5 local RPs.

   Gerald R. Fuller, Professor and Chairperson

II. Home Economics Education Program

1. The program prepares (preservice) teachers for Vermont public schools.

2. PBTE is used in the following courses:

   - Methods of Teaching Home Economics
   - Student Teaching
   - Communication Methods

3. Example: Methods of Teaching Home Economics (3 credits): Although all PBTE modules are listed as resources, the following are required: all B modules, A1, E5, F3 and G10. All required reading and activity assignments are due on certain dates through the course. They receive a critique rating of DNA, limited, acceptable or extensive. Students have options to change and improve their rating and contract for a grade based on required extras and ratings. The final test-outs on the modules are done during student teaching (in the schools) which immediately follows the methods course.

   Teacher educators serve as RPs and are assisted during student teaching by Cooperating Teachers trained in the concepts and materials of PBTE.

Test-site

UV was one of the 10 institutions selected to participate in the advanced testing of the NCRVE modules in the mid-1970s.

Further information:

- Norton, Harrington and Gill, 1978, p. 58.
- Adams et al., 1981, p. 52.
- "The University of Vermont, PBTE Activities" (4pp)
- Fuller, G.R. and Morgan, R.S., Local Education Agency Resource Persons Training for P/CBTE, July 1978.
- Fuller, G.R., Serve as a Local Educational Agency Resource Person, UVM Module I-9, March 1977.
- Fuller, G.R., Vermont Local Resource Person Guide for PBTE, May 1978.
- Tuxworth, E.N., 1977, pp. 116-122.

UTAH STATE UNIVERSITY, LOGAN, UTAH
DEPARTMENT OF AGRICULTURAL EDUCATION

1. There is a list of teaching performances to be demonstrated during both the methods class (use is made of videotaping) and student teaching.

2. Competencies developed during the methods class and practiced again during student teaching include:

   B1, B4, C1, C5-7, C10-14, C17, C21, D3-4, E2

3. Grading is on a satisfactory/repeat basis.

4. Faculty:

   Gilbert A. Long, Department Head

5. Further information:

   Performance Check-Off for Student Teaching

the available PBTE materials. Recently a survey has been conducted of the available performance based teacher education materials within the various staff offices. This list will be made available to all teachers interested in using PBTE materials on an inservice basis.

For further information contact:

Dr. James L. Hoerner
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Blacksburg, VA 24061
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PBTE Activities Abstract

Virginia Polytechnic Institute and State University

Blacksburg, Virginia

The Division of Vocational and Technical Education at Virginia Tech is making use of PBTE materials primarily from a resource point of view.

The Division has a complete set of the modules from the Center, in addition to a collection of performance based materials from other sources.

The following is a description of how Virginia Tech is making use of PBTE.

I. As an Alternative Instructional Resource.

One of the major ways Virginia Tech is using PBTE materials is as alternative instructional resources. Several of the faculty use the Center modules as supplemental in both undergraduate and graduate courses. Students are given the opportunity to expand their study per their own interests through such PBTE materials.

In addition, several students take independent studies due to special interests and/or difficulty in course scheduling. Individualized PBTE materials serve as ideal resources for such independent studies.

II. Application in CBE and Articulation Projects.

Virginia is presently conducting four projects in the state dealing with articulation of vocational programs from high school to community college. The format for the curriculum being developed is competency based. In addition, the state is also sponsoring three projects for developing competency based vocational programs for the high school level. The PBTE materials at Virginia Tech are being made available to all seven projects for application. Fifty-three teacher educators and assistant supervisors are serving as consultants to the seven projects and will prescribe PBTE materials whenever desirable.

III. PBTE Materials as Resource for Materials Development.

With approximately forty full-time professional staff, new instructional materials are constantly being developed. One way PBTE materials can serve is as a resource for development of instructor-prepared instructional materials. A number of our staff draw upon such materials as they prepare new materials for their courses and instructional activities.

IV. PBTE Materials as a Professional Library.

Many vocational teachers throughout Virginia are attending Virginia Tech on a part-time basis. Teachers are encouraged to utilize on an inservice basis

WESTERN KENTUCKY UNIVERSITY, BOWLING GREEN, KENTUCKY
CENTER FOR CAREER AND VOCATIONAL TEACHER EDUCATION

1. The Center has been using its own modules since 1974 for administrator training, and is also adding some of the NCRVE administrator modules in the last 3 years.

2. PBTE modules are used in some of the undergraduate methods courses as supplementary material, not for the entire course.

3. Plan is "to implement a total PBTE program in the future".

4. Faculty:

   Dwight Cline, Coordinator of the Center.

ALBUQUERQUE TECHNICAL-VOCATIONAL INSTITUTE, ALBUQUERQUE, NEW MEXICO

1. CBSD program, including collaboration between ATVI and the University of New Mexico.

2. The program became effective from 1 October, 1977. It was established to meet specific needs of the Institutes's staff.

3. 1977-78, 172 staff participated.
   1978-79, 196 staff participated.

4. Program description: see attached abstract.

5. Faculty:

   Richard S. Rounds, Director, Day Division

6. Further information:

   - ATVI, "Professional Development Plan: A First Year Look", February 1979.
   - ATVI, "The Professional Development Plan: Second Annual Report", May 1980.
   - AVTI, "Professional Development Plan. Draft 10", 1979-80.
   - Pamphlet, "AVTI. PDP. What's a Professional Development Plan?".
   - State Board of Education Regulation 78-5.
   - A copy of the pay plan recognition of PDP units.
   - Adams et al., 1981, p 50.

PBTE WITHIN AN INSTITUTIONAL PROFESSIONAL DEVELOPMENT PLAN

At the Albuquerque Technical-Vocational Institute, PBTE concepts and materials are integrated into a total Professional Development Plan (PDP). Forty-one selected modules form the backbone of the instructional skills phase of the PDP. Proficiency in these modules is required of all persons hired as teachers but who have not completed a preservice teacher education program. The modules identified as critical are: B-1, B-3, B-4, B-5, B-6, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-13, C-14, C-15, C-16, C-17, C-23, C-24, C-25, C-26, C-29, D-1, D-2, D-4, D-5, D-6, E-5, E-6, E-8, E-9, F-3, F-5, G-8, I-3, I-5. Other modules are used with teachers as needed to either develop or reinforce their skills. All of the modules have been coded as required for beginning teachers or as additional work needed for certification purposes or for "master teacher" expectations.

The PBTE concepts and materials are being used in all vocational and technical programs of the Institute as well as in the "Preparatory" program, our program for students who need additional learning skills in order to function successfully in one of the training majors. Since there is no preservice requirement for hiring of teachers at the Institute, this program provides the basis for most of the teacher education experiences needed for the teacher to function successfully in the classroom. The delivery system for these initial teacher skills is a combination of formal course work and individual and/or group work on the modules with assistance from master teachers who serve as Field Resource Persons. Courses are taught jointly by professors from the Department of Secondary and Adult Education at the University of New Mexico (UNM) and leadership personnel from the Institute.

These resource persons are trained through inservice workshops developed by the Institute and involving personnel from UNM. The Institute maintains a professional services contract with Secondary and Adult Education which provides for a professor being on campus one day per week to assist with the PDP project.

The PDP, including this segment of teacher skills development, is administered through the regular administrative channels of the Institute. Additionally, there is a teacher assigned half-time as a Resource Specialist for the project to assist teachers with identifying the various activities which they might need or want to pursue. The specialist also works with the administration to assist them in aiding teachers in completing the various activities which have been agreed upon. The program utilizes Field Resource Persons, volunteer master teachers who receive PDP credit for their activities, to work one-on-one with teachers in training. A survey is taken regularly to determine who is willing to be a field resource person and/or who teachers would like to work with as field resource persons. The program is self-paced within the requirements of the Institute that the basic teaching skills modules be completed within the first two years of initial employment.

All of the skills learned are used in regular Institute classrooms and are verified by one of the resource persons working within the overall PDP

activities. Records are kept on each person in their PDP file, indicating their accomplishments in the teaching skills area along with other activities and accomplishments resulting through the PDP.

The most difficult implementation problems experienced to date relate to the development and deployment of resource persons. This required some changes in Institute philosophy and practice in terms of responsibilities as well as in the deployment of personnel. These were dealt with most effectively through the use of an outside consultant, Jim Pollard from Spokane Community College, and a series of training workshops which were initiated as a result of his assistance.

The Teacher Resource Center houses all materials and media for the PDP, both purchased and internally developed materials. Of particular interest are some of the slide/tape programs which instructors have been developing in a variety of teaching skills areas which are placed in the center. Each topic includes institutionally based requirements and teaching skills blended together, i.e., "How to Plan a Field Trip." This permits teachers who are learning the module of the same title to tie it directly into what happens at our Institute. Plans are underway to develop parallel materials for each of the "B" and "C" modules.

Further information may be obtained through:

Richard S. Rounds, Director, Day Division
Albuquerque Technical-Vocational Institute
Albuquerque, New Mexico 87106

Use of Performance Based Teacher Education Materials in
Nebraska Real Estate Education Program

The use of Performance Based Teacher Education modules originated when a need was recognized by the Nebraska Real Estate Commission in the area of instructional methodology with regard to instructors who instruct real estate classes in Nebraska.

Our Real Estate Licensing Act calls for approval of instructors as well as courses. The Commission has since the inception of the Educational requirements, held instructor seminars in the subject matter areas. Prior to 1978, only Universities, Community Colleges, and State Colleges were able to instruct real estate courses which met the educational requirements of the License Law. In July of 1978, after ammendments were made to the Law, private/proprietary schools were allowed to instruct these courses. We began to receive applications for approval to instruct courses from more and more real estate practitioners. Even though we feel our approval requirements are high for instructors, we noticed very few applicants had had previous instructional experience or training. We therefore decided to change the emphasis of the instructor seminars and began to look for materials that would enable us to offer training to these instructors in instructional techniques. It was at this time that I was introduced to PBTE materials.

We use, or will use over the next two to three years, the majority of the PBTE modules in Categories B, C, and D. In conjunction with the modules, any other pertinent supplemental information is given to participants. We also changed the format from that of seminar to workshop. Each participant works through the four to six modules selected for each two day workshop. The workshops are conducted both as a preservice activity for prospective instructors and as inservice for instructors already approved. The workshops are held at four or five locations, regionally selected, throughout the state, twice each year.

We have developed each workshop around a theme and use the appropriate modules for each, e.g., Planning for the Class, Evaluation, Use of Audio-Visuals in the Classroom and three to five workshops on Classroom Instructional Techniques. The first three workshops mentioned above already have the modules selected. The classroom technique workshops' topics will be selected by what I feel the instructors need to know or "survive" in the classroom and also by what participants feel they need.

Each workshop will accomodate twenty participants maximum with an optimum range of twelve to sixteen preferred. The participants work individually, in pairs, in small groups and as a large group dependent on the activity being carried out. As you can probably already determine, the workshops are not totally "self paced" as the modules were intended to be used. I try to allow enough time so that all can finish without being rushed or having to skip any of the information. With one hundred and twenty-five instructors spread throughout the state, it is impossible for me to view each in the actual school setting within a reasonable time after the workshop.

We have each participant complete a final experience at the workshop in a simulated setting. Then rely heavily on the participant and their supervisors to work out the techniques in the classroom.

I administer the total program, handle the workshops, and monitor the instructors with help of local school supervisory personnel. My job as Deputy Director for Education has many responsibilities besides instructor workshops and I would suppose that approximately ten percent of my time is spent with the instructor workshops. My training has thus far consisted of a Specialist's Degree in Education (Six Year Certificate), and ten years experience in public schools as a teacher, principal, and superintendent. My training with PBTE has consisted of a training workshop and my experiences so far with the materials.

My special implementation problems are 1) finding more time to run the workshops and 2) making sure that what is accomplished at the workshop is practiced when everyone goes home.

The supplemental materials used in the workshop now basically consist of articles or examples that are pertinent.

Are there any unique features in our program? Yes, the use of the materials with college professors, real estate practitioners with educational training and real estate practitioners with little or no educational training. The use of the materials with over one hundred and twenty-five instructors spread throughout a State. The use of the PBTE materials on a forced time basis by groups in a two day period. The use of these materials in a non-formal educational system. I believe these make it unique. Others may say it makes it non-PBTE, but it seems to be working and comments of the participants have been positive, both from educators and practitioners alike.

Les Tyrrell
Deputy Director for Education
Nebraska Real Estate Commission
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PENNSYLVANIA INSTITUTE OF TECHNOLOGY
UPPER DARBY, PENNSYLVANIA

IDENTIFICATION OF COMPETENCIES

The P.I.T. administrative staff selected those modules which appeared to be of greatest value to faculty.

INSTRUCTIONAL MATERIALS

NCRVE modules are used. Copies in the library on permanent reserve for faculty review. Modules also given to instructors at the time that each module was selected. Completed modules retained by individuals for future reference.

INSTRUCTIONAL APPROACH

- An inservice training day was scheduled, at which instructors completed B3.
- The resource leader coordinates all participants. Program self-paced, but instructor is asked to commit to a reasonable date for completion of the next module. The RP contacts the instructor regularly until module is completed and performance is assessed.
- At completion of 16 modules, instructor receives:
  - letter of congratulations and appreciation for participation
  - a modest cash bonus
  - an appropriately-framed certificate
- Regular announcements are made regarding the CBSD program in the weekly newsletter. Positive comments about instructors and other information are included.

ASSESSMENT

- RP maintains records of modules preselected, those completed, and those in progress.
- Program is ungraded.

ASSESSMENT (con't)

- Regular annual evaluations are conducted of all personnel. Faculty administrators often deal with evaluation weaknesses by recommending that a specific module(s) be successfully completed as a method to remedy that weakness.

- Performance assessed in classroom or workshop by RP. Recycling occurs if not satisfactory.

FACULTY

John C. Strayer, Director

QUINCY TECHNICAL SCHOOLS - ILLINOIS

PROGRAM

Competency-based staff development. Began mid-January 1981.

CONTENT

21 NCRVE modules recommended by The National Association for Trade and Technical Schools (NATTS).

PROGRAM DESCRIPTION

- Two resource persons.
- Each instructor maintains a file containing the Competency Profile Chart, a written description of PBTE, the list of 21 NATTS recommended modules, and completed TPAF's.
- Number of instructors is relatively small, so simple record-keeping and administrative processes are adequate. Information kept on the Profile Chart comprises staff member's name, date each module is issued, and data of completion of each module.
- Grades are not used.
- No particular sequence.
- No time limit is given, though the RPs expect a module to be completed within one month.
- The NATTS Certificate requires successful completion of 16 modules.

FACULTY

David B. Devlin, Resource Person, and Chief Instructor of the Air-conditioning Division.

INDIANA UNIVERSITY OF PENNSYLVANIA, INDIANA, PENNSYLVANIA
CENTER FOR VOCATIONAL PERSONNEL PREPARATION

PROGRAM

Competency-based administrator program.
Like the institution's PBTE program, it began (spring 1981) as an adaptation of "Program Life" at Temple University.
Designed for the preparation of comprehensive vocational education supervisors.

CONTENT

63 competencies (in management of curriculum, instruction, personnel, communications, student services, physical facilities and personal/professional development) are covered in the 21 graduate semester credit hours required for provisional supervisory certification.

PROGRAM DESCRIPTION

Very similar to the institution's PBTE program.

SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE, ILLINOIS
DEPARTMENT OF EDUCATIONAL LEADERSHIP

PROGRAM

Competency-based vocational administrator education at graduate level. Began 1972.

CONTENT

- Research in 1971 identified and verified statewide competencies deemed essential by local school superintendents and vocational directors. 159 performances grouped in 7 areas-program planning and implementation, staffing the program, personnel development and management, program operation and evaluation, program management, management of physical facilities, supplies and equipment, and public relations.

- Materials include competency-based materials prepared in-state as well as CBAE modules developed at NCRVE.

PROGRAM FEATURES

- Largely field-based

- Operation similar to PBTE program

- All trainees culminate their program with an on-site internship, in almost all cases guided by CB materials being studied or having been studied earlier in the training program.

- Micro-computer assisted instruction developed for CB materials is being prepared to enhance both pre- and in-service training efforts. Soon, a trainee will be able to study independently almost all of the cognitive content of a graduate administrative training program via micro-computer disks.

PROGRAM EVALUATION

Evaluation in 1978-9 of the CBAE programs at SIU-C, Illinois State University and Northern Illinois University, involving both former participants and their employers, indicated that the perceived impact has been substantial and positive.

FACULTY

Dr. James C. Parker, Professor, Educational Leadership
Dr. Wayne S. Ramp, Professor, Vocational Education Studies

FURTHER INFORMATION

Parker, J.C. and Ramp, W.S., "Competency-based vocational administrator education: an Illinois follow-up", paper presented at the National Conference on Competency-Based Professional Development, Philadelphia, Pennsylvania, October 1981.

UNIVERSITY OF CENTRAL ARKANSAS, CONWAY, ARKANSAS
CENTER FOR VOCATIONAL EDUCATION

PROGRAM

- Inservice CBAE programs for the 23 current directors of the Arkansas post-secondary vocational schools and nine secondary schools.
- Proposed start in October 1981, implemented simultaneously with the PBTE project.
- An Advisory Committee of current directors will establish vocational administrator certification standards.
- NCRVE modules will be used.
- Individual and group competency needs assessment surveys will be used to determine which of 12 modules each director must complete in the 120 hour CBAE program
- Upon successful completion of all the modules, the vocational director will receive his/her certificate.
- a ½-time resource person from the faculty will carry out the major responsibilities of this project.

FACULTY

Vincent J. Feck, Director, Center for Vocational Education

CENTRAL TECHNICAL COMMUNITY COLLEGE, HASTINGS, NEBRASKA

1. Competencies: identification is basically the responsibility of the instructors. Input and approval are given by local advisory committees. The competency list is revised as needed by instructors. Occupational skills are stated in performance terms.

2. Guiding principles: The creation of a learning environment which:

   - eliminates any inhibiting factors which may have been encountered in more traditional arrangements without introducing other factors equally inhibiting.
   - asks that students take a substantial responsibility for their education but at the same time provides guidance, direction and understanding.
   - recognizes the teacher as the college's most valuable resource and the only one able to adjust and respond to the everchanging needs of people.
   - utilizes technology to the fullest extent to disseminate information equitably, on demand when and where it is required.
   - to the greatest extent possible, attempts to accommodate learning differences.
   - encourages quality standards and quality control in instructional materials through tight design criteria.
   - measures student competency by performance against standards expected in B&I, and considers the time taken to achieve acceptable performance levels as a relative factor affected by many variables.
   - permits students to begin, interrupt or return to their education at any time during the year, or change programs and readjust goals without academic penalty.

3. Other features:

   - commitment to individualized learning in all disciplines.
   - teacher is manager of the learning activities, where student i a single area may be working at various levels in several different courses and engaged in many activities.

- self-paced instruction.
- grades, in the traditional sense, are not given for work in occupational areas.
- each course includes:
  - course outline (objectives, units if more than one)
  - study guide (directs students through a sequence of learning resources and experiences)
  - information sheet (presents information in printed form and complements other materials)
  - learning activities (involve the students)
  - feedback sheets (reinforce and assess the knowledge and ability of students)
  - project sheet (simulates on-the-job experience, student applies knowledge and skills).

4. Further information:
   - Central Technical College, 24 pp.
   - Norton, Harrington and Fardig, Develop and Implement a CBE Program. Module CBE-1, 1980, p. 123.

FOX VALLEY TECHNICAL INSTITUTE, APPLETON, WISCONSIN

1. Serves 4,400 fulltime and 40,000 part-time students (April 1981) at post-secondary level. 27 associate degree and 31 vocational diploma programs available. Approximately 800 full and part-time staff).

2. In 1971, the institute began moving away from traditional practices toward an individualized learning system known as Perpetual Enrollment and Graduation (PEG).

3. Features:

   - competency-based instruction: clearly identified, measurable competencies.
   - modified open entry-open exit. Multiple-entry points are predetermined.
   - students progress at their own pace.
   - achievement measured against objectives.
   - students assume greater responsibility for learning
   - cognitive mapping (Hill model) of all students, resulting in a computerized learning profile identifying strengths and weaknesses. The computer analyzes the 27 achievement and personality components, and selects any of 68 prepared statements that describe a particular individual.
   - advanced-standing credit for prior learning (challenge examinations).
   - computer-assisted instruction in many of the courses.
   - a graduate follow-up survey conducted every September. (Results for the most recent one show 94% of graduates are employed; and of the 94%, 84% are employed directly in the field in which they were trained).

4. Competencies are determined by task analysis in the workplace (via personal visits to analyze frequency and complexity), research on what curriculum materials and occupational data already exist, and advisory committee recommendations. Instructors develop individual learning modules for each major unit of study, with assistance from specialized personnel.

5. FVTI programs have advisory committees. 67 committees meet regularly with instructors and management personnel--they are the direct link between the FVTI and the workplace.

6. References:

(1) FVTI 1981-1982 Catalog.

(2) Spanbauer, S.J. and Paris, K.A., "Flexibility suits technology education", School Shop, April 1981, p. 22-3.

(3) FVTI, Innovation Technology Success.

(4) Computer Managed Education at FVTI.

HOLLAND COLLEGE - CANADA

1. Introduced CBE in 1970. All post-secondary programs now competency-based.

2. Key principles of STEP (Self-Training and Evaluation Process) --a competency-based, individualized approach to instruction:

    - Learners shall progress at their own rate.
    - Skills required in an occupational field shall be identified by persons in the field by DACUM process.
    - Students are responsible for their own progress.
    - Learning should be stressed instead of teaching.
    - The role of the instructor is to assess, diagnose, prescribe, tutor, but not to be the sole conveyor of information.
    - Programs shall be individualized to the extent that resources allow.
    - The College shall operate on a year-round basis.
    - Resources, rooms, materials, and instructors shall be scheduled instead of students.
    - Evaluation shall be as realistic and meaningful as possible in keeping with evaluation in the work environment.
    - The teaching-learning process shall maximize student-staff interaction.
    - Students shall be able to enter and exit from a program at any time.
    - Advance credit shall be given for proven performance.
    - Ratings are based on performance, not attendance.
    - Instructors are accountable for student progress.

3. Grading--belief that 3 items are critical in evaluating a person's competency: quality, quantity and amount of supervision. Grading system reflects these items in a 1, 2, 3, 4 (A, B, C) rating scale.

4. Instructional materials:

    1) every program has its own resource center (in the classroom) with all the material and equipment related to that program.

    2) a vertical file box for each competency is maintained--contains a learning guide, printed support materials and locally-produced media.

    3) the materials are developed locally using a consistent Holland College-designed format.

4) each learning guide separates its resources into 3 groups: human, printed, audio-visual.

5. "Record of Achievement," given to students, records ratings of all program competencies.

6. Staff development: instituted 1974. The College requires all instructors to complete a training program acceptable to the college during the first 2 years of employment. Program determined by the instructor in consultation with his immediate supervisor. Overall direction and assistance provided by a staff development specialist.

7. Industry has a major input to all programs through DACUM panels. Each DACUM chart is reviewed and updated by a DACUM panel every three years.

8. Students self-evaluate prior to the instructor's rating; differences are then resolved. Field assessment of competencies may be conducted by the on-the-job trainer. Students may work to improve a rating at any time.

9. References:

1) Holland College. Same Answers

2) Tuxworth (1977:67-74)

3) Norton et al. (1978:56)

4) Norton, R.E. et al., Develop and Implement a CBE Program, Module CBE-1, Columbus, The Ohio State University, 1980, pp. 125-6.

5) Glendinning, D. and Coffin, L., "Developing and implementing inservice training for teachers in competency-based systems", paper handed out at National Conference on Competency-Based Professional Development, Philadelphia, PA, October 1981.

RIDGE VOCATIONAL-TECHNICAL CENTER, WINTER HAVEN, FLORIDA

1. Started in July 1979 - it began operations with a commitment to the installation of CBVE in all programs from teachers, administrative staff, board of public instruction and country school superintendent.

2. Established as a demonstration site in Florida:

   1st year (1979-80) - focus on planning.

   2nd year (1980-81) - focus on demonstrating the center to educators from elsewhere.

   3rd year (1981-82) - focus on disseminating and diffusing CBVE strategies, materials, procedures, etc. throughout Florida.

3. Serves both secondary and post-secondary students in trade, retail business, tourism, manufacturing and services.

   (1) day - 19 separate programs. 741 students (May 1980), of whom 567 are adults

   (2) evening - 230 students (May 1980)

4. Features:

   - individualized, self-paced instruction (use of learning guides for each task)
   - open entry-open exit
   - programs based on specific occupational competencies
   - performance-based assessment (written & performance tests)
   - a management system for the delivery and support of CBVE.
   - a comprehensive staff development program
   - individualized learning center for each program

5. Center population includes students in 3 special categories:

   (1) special needs students (physical handicaps and learning disabilities) - can be successfully "mainstreamed" into CBVE programs because of the individualization of learning.

(2) veterans - self-paced materials allow them to be tested in and receive credit for skills learned in vocational training during military service.

(3) CETA students - aided financially by CETA to learn skills that will help them to get a job.

6. Grading.

In each grading period, 2 separate grades are given:

(1) one based on successful completion of performance objectives. Each task has a number of standard hours assigned to it (time typically required to attain that task, reflecting the complexity of the task). Students held accountable for time spent in the program; as in the working world, output is recognized. Grade reflects demonstrated competency in so many standard hours' worth of completed tasks. Adults can elect to receive a letter grade (A→F) or an S/U grade. High school students require credits for graduation, so grades are adjusted to meet this requirement and a letter grade must be given (150 hours=1 school credit).

(2) The other based on demonstration of employability skills. Program is marked objectively on the basis of such things as punctuality and attendance, proper use of equipment, adherence to safety practices, and interaction with supervisor and co-workers.

7. Certificate of attainment.

On leaving, students receive a transcript listing the performance objectives completed and employability skills record. Students may use this certificate in interaction with employers.

8. References:

(1) RVTC: Competency-Based Vocational Education on Display, Florida Department of Education, July 1980.

(2) Learning at RVTC, Florida Department of Education, July 1980.